

The regulation of the UK retail electricity market

Nuntapunt, Nunnara

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**THE REGULATION OF THE UK RETAIL
ELECTRICITY MARKET**

NUNNARA NUNTAPUNT

**SUBMITTED IN ACCORDANCE WITH THE
REQUIREMENTS FOR THE DEGREE OF MPhil**

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ABSTRACT

This thesis is a study of the regulatory regime which governs the retail electricity market in the United Kingdom. It focuses in particular on the relationship between retailers, consumers and the regulatory authorities and the role of simple and transparent information in determining the price structure in the retail electricity market. This dissertation examines the development and the problems within the UK retail electricity market during the critical period between 2003 and 2010 and analyses the role of the regulatory regime in this. The study critically reviews the argument for using a system of market prices as the best way to provide choices and lower prices for consumers along with the argument for strengthening the role of the regulatory body in response to the interests of consumers. The study shows that this free market model, as favoured by retailers, has failed to provide consumers with either valuable choices or lower prices. It shows that because: 1) consumers are not able to use price information to inform their choices; there is relatively little 'shopping around' for the best price; and 2) the regulatory body is captured by suppliers. The study suggests improvement in the regulatory regime relating to information to facilitate greater efficiency in the retail electricity market and to increase the level of consumer protection.

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DECLARATIONS

I hereby declare that this dissertation is my own work and effort and that it has not been submitted anywhere for any award. Where other sources of information have been used, they have been acknowledged.

Signature.....

Date.....

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ABBREVIATIONS

BETTA	British Electricity Transmission and Trading Arrangements
BIS	Department for Business, Innovation and Skills
CCGT	combined cycle gas turbine
CEGB	Central Electricity Generating Board
CERT	Carbon Emission Reduction Target
Defra	Department for the Environment, Food and Rural Affairs
DGES	Director General of Electricity Supply
EEC	Energy Efficiency Commitment
ESI	electricity supply industry
ESRC	Economic and Social Research Council
EU	European Union
GW	Gigawatts
kW	Kilowatts
MPs	Members of Parliament
MW	Megawatts
NETA	New Electricity Trading Arrangement
NGC	National Grid company
OFFER	Office for Electricity Regulation
Ofgem	Office of Gas and Electricity Markets
RECs	regional electricity companies

PROPER NAMES

Aquila	East Midlands
Area Boards	Eastern
Atlantic Electric and Gas	Economic and Social Research-
British Gas	Council
Carbon Emission Reduction Target	EDF
CE Electric	Electricity Act 1947
Central Electricity Generating-	Electricity Act 1989
Board	Electricity Bill
Central Network	Electricity Council
Combined cycle gas turbine	Energy Act 1983
Competition Act 1998	Energy Act 2004
Competition Commission	Energy Act 2008
Conservative	Energy Assistance Package
Consumer Direct	Energy Efficiency Commitment
Consumer Focus	Energywatch
DECC	Enterprise Act 2002
Department for Business, Innova-	European Commission
tion and Skills	General Election
Department for the Environment, -	the government
Food and Rural Affairs	Green Paper
Directive 2009/72/EC	Home Energy Efficiency Scheme
Directive 2003/54/EC	Innogy
Directive 1996/92/EC	Labour
E.ON	London Electricity

Manweb	Scottish Hydro-Electric
Midlands	ScottishPower
Mrs Thatcher	SEEBOARD
National Grid	South Scotland
National Power	Southern Electric
New Electricity Trading Arrangement	SWALEC
ment	SWEB
North Scotland	Tony Blair
Northern	United Utilities
Norweb	US
npower	Utilities Act 2000
Office for Electricity Regulation	Warm Front
Office of Gas and Electricity Markets	Warm Homes and Energy Conservation Act 2000
PowerGen	Western Power Distribution
Professor Stephen Littlechild	White Paper 2007
Sainsbury Energy	
Scottish and Southern Energy	

Chapter 1: Introduction

1.1 Introduction

More than 27 million householders use electricity regularly in the UK. Electricity as an energy source has an incredible influence on our day to day lives and is used to power most of the technology people use on a daily basis from medical equipment and manufacturing machinery to residential heating, cooking and lighting. With the advent of new entertainment and household technologies that are also electrically powered it can be seen that electricity consumption has been significantly increasing every year for many years. This trend will continue, which will undoubtedly affect pricing and future human life.

Unfortunately, retail electricity price for final consumers in the UK has been increasing sharply since 2003. It substantially affects most householders and vulnerable groups, leading them living in fuel poverty. The percentage of UK consumers experiencing energy poverty has doubled since whereby electricity prices for householders have not been reduced and have increased significantly, becoming higher than before the introduction of privatisation (DEFRA 2012; Great Britain. Parliament. House of Commons, 2011). In relation to this, approximately 22,000 people over the age of 65 died as a result of cold-related illness during 2007 and 2008. This tragic issue had arisen from the fact that consumers had been paying too much for energy. It is noted that, for every 10% of energy price increase, approximately 400,000

people will experience fuel poverty. By mid 2009, there were approximately five million UK householders living in fuel poverty. (Hansard HC 10 June 2009; Business and Enterprise Committee: Eleventh Report of Session 2007-08; The Bow Group 2007).

The UK retail electricity market

According to the above issues, there has been an increasing focus on the retail electricity market sector, by scholars, stakeholders and the government. There are six main reasons for this. First, the retail electricity market system relates to three key players: electricity suppliers, householders and the regulator. Relationships and interactions between them have influenced market prices and have consequently affected public interests (Dubash 2001; Fox et al. 1991, quoted in Ferreira 2006).

Second, the introduction of full competition or the emergence of the retail electricity market was expected to generate further positive effect after privatisation and liberalisation, in particular, lower electricity prices for consumers. People have been offered benefits with the opportunity to choose and switch service providers, as a result of this change. However, in actual fact, to date, prices have been increasing sharply, householders have not sufficiently engaged with the retail market, and many of those considered vulnerable have not been protected adequately through the existing competitive retail market and the switching process (discussed in detail in the next sections) (DECC Digest of United Kingdom Energy Statistics 2009; Defeuilley 2009a; Peerbocus 2007).

Third, concerns about fuel poverty in the UK have increased and the government set targets to end fuel poverty among those vulnerable consumers by 2010 and among all other households by 2016. The electricity sector is responsible for a quarter of the soaring number of households suffering in fuel poverty, which links to the increase in retail electricity prices from 2003 until now (Great Britain. Parliament. House of Commons, 2011; DECC Digest of United Kingdom Energy Statistics 2009; Ofgem 2001).

Fourth, any significant efficiency gain within the generation sectors emerging after reform are not being passed on to householders, the heaviest end-users, which is described as the 'gap' (Peerbocus 2007), with the author viewing this 'gap' as the unknown obstructer which: 1) hinders consumers from obtaining the benefit of competition that occurs within the generation sectors; 2) leads to an inefficient retail market; and 3) causes a poor connection between electricity consumers and service providers.

Fifth, awareness of the externalities of the retail electricity market system has become an issue, raising the focus of examining the retail market to ensure that the interests of consumers cannot be threatened by issues such as economic crisis and the requirement of EU legislation on the use and availability of renewable energy (Rowlands 2005; Marshall 2003; Roberts et al. 1991).

Sixth, the regulatory policy developed has recently determined to increase economic and social interests, in particular focusing on adequate protection of

energy householders and vulnerable groups. This is associated and consistent with the objectives and duties of the regulatory body, Ofgem, to enhance these interests, with power being provided under the related national Acts and EU Directives such as the Utilities Act 2000 and Directive 2009/72/EC (an amendment to Directive 2003/54/EC) (James 2009; OJ L 211, 14.08.2009; OJ L 176, 15.07.2003).

Additionally, the market has been substantially focused on even more, in particular where important factors within the system and other externalities have significantly changed. For example: recently, there have been substantial concerns about a reduction in competition within the system happening as a result of an increase in the number of vertically integrated companies within the energy sector, this issue highlighting the existence of market power (market failure) (Ofgem Achieved Press Release 2009c; Thomas 2002a); protecting the interests of consumers has been intensely focused on in response to the national Acts and EU Directives (OJ L 211 14.08.2009; Marshall 2003; National Audit Office (NAO) 2001); as well as this, environmental issues at EU level have been highlighted because the energy sector is responsible for 28% of carbon emissions in the UK (OJ L 211 14.08.2009; Munisamy–Doraisamy 2004; Eberlein 2001). These issues have had an impact on pricing, and influencing the scale of regulatory responses within the UK electricity industry.

Especially, with regard to the relation between an uncompetitive retail electricity market (as a result of reduction in competition) and several issues

emerging such as price unfairness in relation to fuel poverty, price/tariff information, consumer confidence and trust, and difficulties in switching service supplier, with price/tariff information found to be the most critical issue.

Price/tariff information has played a critical role affecting the numbers of customer switching supplier and the increased in the number of people living in fuel poverty. In fact, price/tariff information is the only prime factor used by energy consumers for interacting with the market. This is because there is no difference among electricity services provided by different companies, only prices. However, there have been more than 5,000 energy tariffs available across suppliers within the UK. Consumers have found information relatively complex to understand and have not received adequate quality information for their market participation, resulting in either them avoiding participating with the market or making worse choices by switching to a new, more expensive, supplier. Additionally, misleading information with deceptive guarantees of lower prices and premiums was provided by door to door sales people, leading many consumers to switch to more expensive suppliers and consequently suffering from fuel poverty (Foggo and Newell 2008; NAO 2001).

Nonetheless, also, there has been an increasing focus on the perspective of customer switching rate. Two main reasons account for this. First, many people do switch each year, but many of them end up on a worse deal, resulting in them having to pay much more for electricity consumption. Second, it is Ofgem's assumption that, in order to have successful market

function, people need to engage with the market by using price information and switch service provider, meaning that a high switching rate refers to a high intensity of competition. However, in fact, there has been a survey showing that millions of householders have never switched and have been inactive to market price signals, particularly vulnerable groups. This was because they found market pricing information complicated and could not recognise the significant gains from switching; rather, they saw the possibility that they could be worse off if there was an error during the switching process. Also, the number of consumer complaints in the UK regarding switching service providers has notably increased; this seems to be related to the number of people living in fuel poverty (Defeuilley 2009a, 2009b; Which? 2008; Ipsos MORI 2008).

The current response from the regulatory body

In response to the above issues, Ofgem, the energy regulator, launched an investigation known as 'Ofgem Probe' (Ofgem 2008), which was to examine retail energy market performance in order to respond to concerns about the function of the market for domestic consumers and small businesses. This was aimed at ensuring that consumers are able to fully engage with retail pricing and competition as well as ensuring that the retail market is efficient and working well. The result was announced at the end of 2008, showing that retail markets were efficient and suppliers were acting competitively. According to the Probe, the vast majority of consumers benefited from the establishment of retail competition as soon as the market began in 1998.

However, Ofgem also discovered from the study that there was an issue regarding the promotion of a competitive retail market which needed to be improved; sufficient, good information was not being effectively delivered to householders, particularly vulnerable groups who were gaining the least benefit from the competition, resulting in that they cannot always benefit from the market and competition. As a result, Ofgem has introduced many remedies and requirements in response to this problem. Perspectives on the extent to which these requirements have affected the system are discussed later.

In relation to the discussion above, it is worth highlighting here that, the issue of information is also consistent with the requirement highlighted in the current EU Directive 2009/72/EC with regard to consumer protection and consumer rights needing to be provided through appropriate and sufficient price/tariff information (Official Journal of the European Union L 211, 14.08.2009). Clearly, information with respect to market prices and benefits to electricity consumers has recently become a critical issue requiring further investigation.

In relation to the above, the proposal regarding consumer and energy regulation in response to the recent problems within the UK retail energy markets and the need to ensure social responsibility was discussed in the Parliamentary debates in June 2009. The content of the debates detailed the need to develop sensible regulation in order to strengthen Ofgem's remedies and to obtain the right incentives, as well as stressing greater measures for an efficient regulatory regime, which Ofgem and the government should be

considering for increasing the level of consumer protection, in particular for the poor (Hansard HC 10 June 2009).

The focus of the debate was on householders, especially vulnerable groups. MPs urged the government to look into how suppliers simplify and deliver the social scheme and information to consumers, as MPs wanted to make sure that vulnerable groups are on the cheapest tariff available and are being treated fairly within the energy retail system (Hansard HC 10 June 2009).

In accordance with government policy towards greater social concern and the power provided under the Warm Homes and Energy Conservation Act 2000, including the above-mentioned reasons, Ofgem introduced the role of the social energy tariff to make it effectively useful for all vulnerable consumers (social tariff is currently being replaced by the Warm Home Discount Scheme which is available from April 2011 to March 2015). Ofgem made sure that the social tariff was the cheapest deal and urged suppliers to comply with providing this benefit, including the availability of lowest price and energy efficiency grant for vulnerable consumers across the country (Smith 2009; Ofgem Achieved Press Release 2008i; Baker 2006). However, unfortunately, Ofgem has not really tackled the problem of obtaining consistent, more accessible and fairer social tariffs for the group of people at the bottom who are living in fuel poverty.

Furthermore, recently, Ofgem has attempted to introduce the solution for current circumstances, by proposing a new scheme known as “Project

Discovery”; this is to study what can be done in relation to government intervention or to a provision of new measures and an improved regulatory regime to ensure the energy security of the country and the consumer benefit, whereby we will soon be facing many critical challenges such as the global and national financial crisis, and the need to invest in renewable energy in line with EU legislation, all of which will have a definite impact on consumer bills and the risk for people who live in fuel poverty. In fact, Ofgem has recently pointed out that householders could face an increase in retail electricity price of up to 60% by 2016 as a result of these issues (Ofgem 2010; Webb 2010; Ofgem Achieved Press Release 2009j). Clearly the indication is that reformed energy sectors, such as the UK electricity sector, have become important for consumer interests, requiring extensive investigation into how to develop useful strategies and the accompanying regulation in order to ensure sustainable benefits for consumers.

Justification for the research

The electricity sector is considered one of the largest industries in the UK. The sector reform includes introducing competition within the generation and supply sectors and delivering the benefits of competition to consumers (Peerbocus 2007; Woo, Lloyd and Tishler 2003). Reformed electricity sectors have been accompanied by a regulatory framework and practice to reach the goal of reformation; for that reason, regulation can drive results and outcomes, namely, regulatory regime is a significant factor that can increase the success of electricity sector reform (Munisamy–Doraisamy 2004; Levi-Faur 2001).

The development of the regulatory regime within the reformed electricity sector is being continually discussed and studied. The major aims of studies regarding the development, the use of economic regulation and the means to impose it are to help identify the correct paths to be taken in order to increase public benefits and to develop them to become a standard model of implementation, this form being used varyingly and nationwide for correcting all kinds of market failures and undesirable outcomes (Waddams Price 2010; Pollitt 2008; Rothkopf 2007). In other words, the regulatory regime needs to be improved regularly in order to keep pace with uncertainty factors.

According to the above, the retail electricity market has undoubtedly become the main focus for economic regulation, whereby the system, to date, has not been contributing to a balance of economic and social interests but to the rise in energy poverty and an inadequate consumer safeguard. The mentioned issues, particularly with regard to information, highlight the extent of the regulatory regime needing to be improved and introduced alongside these objectives and goals. Despite Ofgem having attempted to contribute to the investigation in the retail market (Ofgem Probe 2008), creating remedies and regulations in response to it, unfortunately, it appears that existing regulations still do not sufficiently address the need to protect householders, especially the poor. There has been no clear regulation from Ofgem that can be used either to maximise market participation by householders or to protect them from a substantial electricity price increase as a result of present and future issues. These include external issues such as the impact of the economic crisis, with an increasing number of people becoming unemployed, and as a

result of this, being categorised as vulnerable, as well as those people who are in debt and who are struggling to manage their debt commitments and to pay for their electricity bills.

Action to improve regulations and enforcement in order to support householders to gain advantages from the market and to protect them from undesirable results, while ensuring economic efficiency, is essential. Therefore, this study will first provide an analysis on development in the regulatory regime of the UK retail electricity market, focusing on the issue of information relating to the interests of consumers, that is more suitable to the current perspective of the system and that will be useful in directing a regulatory framework and related regulations so as to facilitate greater economic interest along with increase levels of consumer protection.

1.2 Research aims and objectives and methodology

The above introduction has set out the context for the analysis within the dissertation. The following section outlines the main aims of the study and indicates the methodology that will be applied to achieve the aims and objectives.

Research aims and objectives

The study aims to provide an analysis on a development in the regulatory regime of the UK retail electricity market, focusing on the issue of information, in that would be more appropriate than the existing one for protecting the interests of consumers. This study set outs to achieve the following

objectives: 1) evaluating the evolution of the UK retail electricity market system (discussed in Chapter 4); 2) understanding the current stage of the problem within the retail market (discussed in Chapter 4); and 3) analysing an improved regulatory regime in relevance to the aspect of information and to the relationship between the regulator, electricity suppliers and householders, with these being a key element for reducing the current problem (discussed in Chapter 5).

Methodology

As discussed above, there are many knowledge gaps relating to an improvement in the regulatory regime of the UK retail electricity market and the interests of consumers, this becoming more important as a result of many challenges occurring inside and outside the market system, and affecting consumer benefits (discussed in detail in Chapter 3). The study therefore explores these issues in greater depth and investigates how the regulatory regime can be improved, by using a qualitative research technique that is interactive and constructive as a way of providing intensive study. This will shed light on important issues and possible solutions through the development of rich, in-depth information (Saint-Hilaire and Doukakis 2005).

Research tools

In order to complete the research objectives, the study uses 'in-depth interviews' as the main tool to collect primary data. This method provides a degree of flexibility and the possibility of modifying enquiries and related questions following up the interviewee's response. In particular, interviewing

experts from related organisations is the key research strategy in gaining rich data used in building a comprehensive understanding of all the issues. Importantly, this method allows the author to explore issues, key themes and theories, identified through the literature review with participants, while helping to generate ideas and arguments and to capture important data relating to these themes and theories, in order to, ultimately, evaluate and suggest an improved regulatory regime (Saint-Hilaire and Doukakis 2005; Julios 2002).

The data is collected through conducting a semi- structured interview with over 40 relevant stakeholders and other related organisations. These are the expertises working directly with energy consumers and their benefits. Purposive sampling is used to select the participants for primary data collection due to the large population from all stakeholders and the limitations of time and restricted funding. The 40 participants are selected according to seven broad constituencies: 1) regulatory bodies (R); 2) consumer bodies (C); 3) government (G); 4) scholars (S); 5) supplier sites (SS); 6) comparison sites (CS); and 7) journalist (J). These organisations are identified as particularly relevant to the issue of the UK retail electricity market. Additionally, the interviewee's case number is provided (e.g. SS1), which helps to recognise quotes from the same interviewee throughout the text.

Questioning during the interviews was focused on the relationship between the energy regulator, the suppliers and the consumers in relation to competition and market participation by consumers, the electricity service and the provision of price/tariff information along with various duties of the

regulator. Interviews were either conducted over the phone or face-to-face. All interviews were audio taped and transcribed verbatim.

A secondary data analysis is carried out to supplement the interview findings, this also helping to shape the discussion of an improved regulatory regime outlined in the final chapter of the study. This includes the statistics regarding increased retail electricity prices, consumer switching rate and the related Directives and national Acts. These are collected from information available on the DECC, DEFRA, Ofgem, Consumer Focus and energy comparison sites websites, newspapers, press releases, Ofgem Probe, NAO and PAC annual reports, energy bills, etc.

Analysis of findings

In order to analyse the interview findings, the theoretical framework (discussed in Chapter 2) is used. The technique involves two methods of logical reasoning, which are the deductive and inductive approaches. These are applied for analysing data and for generating the answer to the research question. The research finally shows that we have arrived at a better understanding of the evolution of the UK retail electricity market along with the current problems facing it. Additionally, it provides a conclusion regarding possible improvements in the regulatory regime relating to information so as to help increase the levels of consumer protection.

Because of the fact that this research is related to many changes involving time, the research timeline is fixed and is the period from 2003 to 2010, which

is historically related to the fact that the price cap was removed in 2002 and market-based regulation was then promptly introduced.

Research limitations

Research limitations are related to some issues as a result of the qualitative approach and technique as well as the sampling size and method, which include: 1) a greater risk in bias; 2) difficulty in evaluating precision and reliability of data; and 3) difficulty in drawing reference from interviews to make generalisations. Additionally, political issues may affect the internal validity; this is due to the fact that, during the period of research, there was a General Election (May 2010). A new government could have had an impact on improving Ofgem's performance for a time because the authorities would try to favour the new government by trying to be tough with suppliers (Webb 2010); the argument regarding a 'captured Ofgem' could become faulty during the General Election. This shows that political change could create threats to internal validity.

1.3 Structure of the dissertation

The dissertation comprises two parts, each dealing with different aspects of the study of the regulation of the UK retail electricity market. The first part outlines: 1) the importance of the retail electricity sector in relation to an improvement in the regulatory regime; and 2) the analysis of related themes and studies on recent issues and changes in the regulatory regime. Chapter 1 provides an introductory overview of the regulatory regime and the current stage of the problems within the market relating to the interests of consumers.

Additionally, the chapter discusses the need to consider improving the regulatory regime. Chapter 2 provides the dissertation's theoretical framework that will be used for an empirical analysis of the study. Chapter 3 reviews related literature, demonstrating the main findings in previous studies; information gained from the literature review contributes to the issues that deserve further investigation.

The second part of the study reveals the evolution of the UK electricity sector. This includes the history of the retail market. This part also explores and analyses the problems occurring between 2003 and 2010 and the possible improvement in the regulatory regime. Chapter 4 gives a historical overview of the UK electricity sector over the past 20 years, detailing how the establishment of the retail market system developed in relation to the scenario of electricity price increases, this reflecting a scenario of millions of people living in energy poverty and the importance of improving the regulatory regime. Additionally, the chapter presents an analysis of both internal and external factors affecting electricity price movement since 2003, including the period under discussion between 2003 and 2010. Chapter 5 provides an investigation into sources of the information issue and an improvement in the regulatory regime associated with information used within the relationship between suppliers, consumers and the regulator. Additionally, the chapter explores the regulatory authorities' performance, examining whether or not Ofgem has exercised their power efficiently (through application of regulation) in order to protect the interests of consumers. Finally, the dissertation shows possible perspective of improvement in the regulatory regime of the UK retail

electricity market in response to the crisis during the post-2003 period. Chapter 6 provides overall discussion, conclusion and some recommendations drawing from the findings. The contribution to knowledge and future research are also discussed.

Chapter 2: Theoretical Framework

The previous chapter introduced the context of the study and showed the importance of improvement in the regulatory regime of the UK retail electricity market with relevance to the interests of consumers. It also set out the academic justification highlighting the value of the study, outlined its main aims and objectives, and described the methodological material that will be applied in the study. This chapter introduces the main theme of an efficient regulatory regime in a liberalised energy market relating to a solution for market failure, and provides other related thoughts regarding this area. These various theoretical views demonstrate the influential methods of viewing regulation in an energy context with relevance to economic and consumer interests. These reflect a standpoint of current policy environment in the UK with regard to reformed energy sectors. Additionally, the chapter goes on to review the main concepts and theories contributing to the application of regulation within the UK retail electricity market system.

The purpose of this chapter is to provide an analytical framework for an empirical analysis that will be presented in the second part of this dissertation. Accordingly, the presentation is selectively focused in particular on the relationship between suppliers, consumers and the regulatory body within the retail electricity market, this relating to: 1) use of regulation (licence); and 2) the role of regulatory information applied between the above three players in reinforcing competition and market participation by consumers, determining the price structure in the market, and consequently contributing to a long-term solution for adequate consumer protection. Particular emphasis on consumer

benefit through regulatory policies and regulation is given to householders and those considered vulnerable, who are in a critical position and face the risk of falling into fuel poverty along with further undesirable outcomes in this era of liberalisation.

The definition of an improved regulatory regime can be broadened to include overall improvements by defining the appropriateness of supporting a goal of electricity industry reform. In this study, the analysis of an improved regulatory regime critically highlights the aspect of social objectives for the interests of UK householders while ensuring retail market efficiency during the period between 2003 and 2010.

This chapter is outlined as follows. The chapter starts with concepts of improved or efficient regulation that are being applied within the market system in Section 2.1. It includes descriptions of market, market failure, and relevant economic theories relating to competition, regulation, and competition policy currently being focused on in the energy context. Additionally, the perspective of social obligation is also exposed. Section 2.2 provides an overview of the regulatory regime within the UK retail electricity market system. This includes highlighting the UK model of electricity regulation. Additionally, the chapter reviews the use of regulation, as a form of licence condition with respect to the regulatory information, within the relationship between suppliers, consumers and the regulator. Section 2.3 provides an analytical overview of the dissertation's theoretical framework. The section

gives a generalisation of the framework that will be used later in the analysis part of the dissertation, as well as providing a conclusion.

2.1 Themes of a regulatory regime in a liberalised market

As revealed in the introductory chapter, an improvement in the regulatory regime is important and is required to achieve an efficient market, as well as a consumer protection, particularly within the energy and other utility industries as key providers for universal service. The following shows details of the market, market failure, and economic theories relating to regulation, competition, and public policy. In addition, the perspective of social obligation is highlighted. With these contexts being revealed, it should contribute to a better understanding of: 1) an efficient regulatory regime that suits a currently liberalised market; and 2) how these various theoretical approaches are applied to the UK energy context, this framework being utilised to achieve the main aim previously outlined.

2.1.1 Market system

The study examines the development and problems within the liberalised market and argues the case for improvement in its regulatory regime. It is therefore important at this point to look at the nature of the market system. Market is a system of economic coercion. Exchange and trade of goods and services are voluntary and are being stimulated and determined by price mechanism. Market participants see themselves as making free and voluntary choices, this relating to purchases and sales; people choose what to produce, how things are being produced and the size of production (Lindblom 2002;

Samuels 1996; Mitchell and Simmons 1994). Market force was described by Adam Smith in '*The Wealth of the Nations*' that it reflects a sense of self-interest by sellers and buyers; market participants usually attempt to take full advantage from market for their self-interest and maximise the interaction between themselves; with these actions taking place with competition introduced, then the outcomes and benefits would eventually serve society. This situation occurs naturally without the need to apply regulation, but because of an 'invisible hand'. However, Stiglitz opposed this theory, arguing that "*there is no such thing as an invisible hand*" and markets are always inefficient in all economies.

The studies above show that the market is an economy and an open system, whereby an interaction between buyers and sellers is driven by prices and their satisfaction, and whereby this relationship is non-coerced. The only point that these studies have not made clear is whether or not the market force (from self-interest) alone can drive desirable outcomes and has a potential to exclusively resolve all problems without government intervention.

(a) Market efficiency

Studies have shown that market efficiency refers to an allocative and operational efficiency with information available (Meitner 2006; Bator 1992). The degree of market efficiency is critical for the explanatory power of market price because efficiency involves a lower or at least a less predictable pricing. A perfect market can be described as a market: 1) without resistance such as

no tax; 2) with perfect competition (this condition is very rare); and 3) with informational efficiency (Hackett 2006; Meitner 2006).

Alternative theories by Pareto showed that market efficiency should mean a situation where market participants are satisfied; production and exchange of goods and services will occur until the equilibrium system is reached. However, Pareto stressed that *“no one could be made better off without someone being made worse off”*. According to Pareto, one man's gain is another one's loss, this always taking place in a normal and efficient market environment whereby satisfaction is specifically used as a key indicator (Buchanan 2001; Stiglitz 1994).

The above reveals a contrasting thought regarding market efficiency. It appears that an efficient market is determined by several factors, leading to a belief that it is rare or may never occur these days. The alternative analysis by Pareto, seemingly, gives a sensible view of the market in the real world; the only concern here is whether or not losers are always small consumers.

(b) Perfect and imperfect competition

According to the above discussion, it may be worth examining carefully the issue of perfect and imperfect competition because a scenario of inefficient competition results in an inefficient market and disadvantages for consumers.

Scholars looked at different indicators in evaluating the degree of market competition. For example, Holland (1987, quoted in Roberts et al. 1991 p.11)

looked at a combination of the availability of multiple firms and the loss of market power as decisive factors, while Roberts et al. (1991 p.11) looked at the relationship between the service price and the cost of producing the last unit of production known as a 'marginal cost'. Additionally, Cook (2001 pp.3-7) referred to a competitive one with many independently - operating small enterprises selling a homogeneous product with which they are free to continue to either enter or exit the market. Additionally, sellers and buyers must have perfect information (see also Baumol and Blinder 2009; Kwoka and Madjarov 2007).

On the other side of the argument with regard to the issue of imperfect competition, scholars gave a specific definition that it is a situation where market is dominated by a small number of firms and one or more firms have power to manipulate prices. It includes both unconcealed or tacit collusion and nepotism (Motta 2004; Holland 1987, quoted in Roberts et al. 1991 p.11). In other words, firm behaves as a price maker and not as a price taker. However, this point is contrast to Schumpeter's theory, arguing that, in the real world of the market system, large corporate firms were replacing traditional family-owned business; mergers and takeovers were continually taking place. When this change occurred, a few large firms effectively developed, exercising their control over prices and goods and services, allowing them to plan their activities and eventually could yield benefits, which present in the form of secure supplies and lower prices to consumers (Mitchell and Simmons 1994; Brouwer 1991). Seemingly, his point of view underestimates the issue of output restriction as a result of price manipulation

by a few firms, who could frequently set up higher prices than firms in the competitive market would.

According to the above issues, however, perfect competition could be possible but it is rare and close to impossible to achieve (see Section 2.1.1 (a)). What we have realised here is that efficient competition is critically important for the market and for consumers. However, it is non-existent these days. This fact importantly reflects that it may not be necessary to judge the market against this standard of perfect competition (because it does not exist) as long as markets can either work well or come close to a perfectly competitive standard. The question is: what rules can be used to appropriately judge market performance when markets are not working well and benefits cannot be delivered to consumers, in order to provide a guide for the application of regulation to benefit people?

Other than the above studies, Baumol and Sidak (1994 pp.43-45) also argued that perfect competition is not necessary so long as markets are performing best (in other words, there is no market failure), along with the benefits of the introduction of a liberalised market being delivered effectively to consumers. However, the importance is that they suggested the alternative aspect of viewing a relationship between a perfectly competitive market and regulation, by using the concept of perfectly contestable markets as a means to help the regulator design what rules may be utilised to evaluate market performance and to guide regulation.

Baumol and Sidak (1994 pp.43-45) clarified that a large number of buyers and sellers needing to exist within a perfectly competitive market does not necessarily have to be the case on condition that monopoly power (as a result of the existence of a small number of firms in the market) is likely to be temporary, therefore, no regulation being required. This is a situation of 'a contestable market', where entry and exit can be effortless and costless; new firms enter the market to earn profits but do not stay in the market as long. These new firms cannot exercise long- term monopoly power if others could also easily and cheaply (no substantial investment) enter the market. The rival firms would competitively offer customers lower prices, resulting in the new firms instantly leaving the market after earning some profits. This is a recurring cycle, where the existence of profits in the market would be a magnet for the entry of new firms, and these firms would later leave the market after having too many rivals existing in the market and/or potential profits being low. This, however, reflects that Baumol and Sidak did not see the absence of competition, arising as a result of the existence of a small number of firms, as either a failure or a disadvantage for consumers; rather, they saw this situation as part of market movement to benefit consumers (because rivals competitively offer lower service prices).

On the other hand, the author views this point of a contestable market argued by Baumol and Sidak as a critical argument for the UK electricity market, because these new firms, who aim to enter the market to earn excessive profits, are likely to leave the market within the short term if their expectations are not reached. The rival firms existing in the market for a long term

(ongoing, not temporary) mostly gain power through vertical and horizontal integration within the electricity generation sectors and therefore have more power to low the prices for a short-term period in order to pressurise these new entrants to leave the market. Electricity cannot be stored and is generated in power stations with a long planning period. The threat of entry by these small new entrants (who neither own any power station nor distribution network) can neither provide a significant threat to the system nor sufficient protection to consumers. Having said that, if these new entrants cannot either continue to enter the market (because of expensive electricity investments) and to offer lower prices for consumers or stay longer in the market, but a few firms (with large capacity) can, the likelihood of the return of market power could still be high, so the disadvantages for consumers remain.

From the above, most studies significantly concern a number of firms and the degree of market entry as a key criterion for a competitive market. However, in fact, other aspects relating to weakness and threats of the market system have also had a substantial impact on the degree of competition. In this study, changes taking place both in and outside the system, particularly retail pricing information used between suppliers, consumers and the regulator, is focused on as a critical criterion creating a significant impact on competition unit in this complicated era of liberalised market.

In theory, a competitive system is expected to face the least information issue in order for consumers to use information for their market participation and for the system to effectively deliver benefits to consumers. Imperfect market

occurring as a result of imperfect information has been examined to clarify how this relates to the degree of competition. However, as suggested above, perfect competition or a perfect market does indeed not exist these days and therefore, competitive market in relation to the availability of pricing information has been focused on and discussed extensively in order to address the appropriate information required within a competitive market system. Some scholars verify imperfect information as a common issue without a necessity for government action to impose any policy in order to strengthen information quality in a competition unit. According to them, information can never be perfect and therefore a competitive market does not depend on perfect information. For that reason, the application of regulation as a solution in this regard is not recommended (Samuelson and Marks 2012; Pennington 2010). On the other hand, some looked at this information issue as the significant factor leading to a poor degree of competition and, ultimately, market failure. According to them, a high degree of asymmetric information in the market system has become the criterion determining how a lower competitive level in the market is (Dierks 2005; Stiglitz 2003). The relationship between suppliers (sellers) and consumers (buyers) does not hold in the environment of asymmetric information and, as a result, competitive condition in the system does not exist. In other words, unless the government intervenes, a competitive market can never take place in the environment of intensive asymmetric information. If not, expected benefits from liberalised market will not be delivered to consumers (Stiglitz 2008, 2008a, 1994).

However, according to recent circumstance, imperfect information in the UK energy market system has been accelerated by various firms' strategies, this investors creating immense asymmetric information as part of their business strategies for their own profits (they aim to increase poor information in the market for their own interests). Additionally, pricing information is usually set by a few large firms who have the power to manipulate price. This reflects how the availability of information relates to disadvantageous changes in the degree of competition. Ultimately, the market in the 'real world' is way too far from perfect and is totally not working, with this failing to provide consumers with better deal. Competitive market should have the least imperfect information with neither misleading and deceptive information nor uncompetitive price setting information. This problem, indeed, makes the market to be extremely imperfect.

According to the theory, the availability of appropriate information in the competition unit, although information may not be perfect, will remarkably lead to an existence of competitive market. This also will allow the system to work effectively and finally create sustainable market efficiency. According to Stiglitz, government intervention in supporting competition is always recommended as a solution for better competition unit against all weaknesses and threats, particularly in the area of utilities. It was claimed that governmental policies supporting a provision of adequate quality information could help to sustain a competitive condition (Stiglitz 2008, 2008a, 1994). Therefore, competitive market now depends on the degree of information issue, especially in the retail energy system.

(c) Market failure

Having discussed the issues of market efficiency and competition, it is important to now examine what may possibly cause an inefficient market or 'market failure' and what can be an appropriate solution to this problem. Many scholars indicated that 'market failure' is a situation whereby the market is not efficient, resulting in an inability of the market to produce efficient outcomes. Additionally, the failure undermines a balance of economic and social interests, leading to a call for improvement in a regulatory regime (see, for example, Mitchell and Simmons 1994; Bator 1992; ed. Cowen 1992). For example, according to (ed.) Cowen (1992), 'market failure' is defined as the scenario of the inefficient allocation and distribution of goods and services that happens through a free market mechanism, and indicating that there are many factors relating to this unfavourable situation such as costs and externalities.

On the other hand, arguments by Mitchell and Simmons (1994), Roberts et al. (1991 p.15) and Noll (1989, quoted in Eberlein 2001 p.32) showed that market failure is described as an excuse for government intervention. This interference includes uses of price control, anti-trust law/ competition policy, provision of good information for consumers, direct provision of goods and services, redistribution of income, etc. The aim is to correct the sources and consequences of market failure.

Market power, asymmetric information, and externalities

The sources of market failure being investigated in this study include: 1) market power; 2) asymmetric information; and 3) externalities. It is important to now look carefully at these and how they perform and contribute to an unfavourable consequence of allocation and distribution of resources.

First, market power is described as a situation whereby firms can alter service prices without the disadvantage of losing market share (see, for example, Defeuilley 2009a; Littlechild 2001; Macatangay 2001). For example, Motta (2004 p.40) has pointed out that it is a situation whereby firms have the ability to lift prices above a competitive level (the benchmark price) in a profitable way, this often being as the results of either horizontal or vertical mergers and of the collusion. Importantly, the collusive condition is derived from several issues, for example: 1) the liberalised industry with a smaller number of firms; 2) the liberalised industry with many firms of identical size and of large capacity setting a high price and obtaining a share of the profits; and 3) a weak power of buyer/consumer with the inability to bargain. It is clear that these sources relate to the intensity of competition in the market, resulting in market power. Therefore, Motta suggested that in the case that these firms have a large degree of market power, competition policy can serve as a way to resolve this problem. However, in the case of market power only being temporary, competition policy may not apply because market force would naturally drive desirable outcomes (see also Baumol and Sidak 1994)

Second, asymmetric information causes market failure, as argued by Stiglitz. It is a scenario whereby the amount of information held by consumers regarding goods or services is smaller than the information held by producers. The theme focuses on the relation between imperfect information and economy. Information is a market determinant because market participants will typically observe and use information for their decision - making. Unfortunately, market participants always have insufficient information in the real world of imperfect competition (Dierks 2005; Stiglitz 2003). In relation to this, a lack of knowledge by consumers, at some point, allows rogue agents to take action, causing problems and undermining consumers' trust (Dierks 2005 Ch.3). Likewise, Stiglitz (2008, 2008a, 1994) argued that there are incentives for sellers to make use of and to increase the imperfection of information for their own interests, this clearly affecting public interest. In brief, the greater the information asymmetry between firms and consumers, the greater the scope for deception and fraud; within these unfavourable conditions emerge the rogue agents are more likely to be successful, and subsequently consumers face difficulties.

In relation to the above, the issue of market failure occurring as a result of asymmetric information is generally sorted into different categories. The type underlined in this study refers to 'adverse selection'. This applies to the capital market and is defined as a circumstance whereby market participants do not have adequate quality information regarding quality of products while negotiating or making a purchase of goods or services in the real world of imperfect information. Sellers always overstate the qualities of products

(misleading). This results in an increase in poor quality of goods in the market because firms can maximise profits by operating in this way. Additionally, consumers will either avoid taking a risk by not participating with the market or will wrongly purchase a bad product. These cause pricing inefficiency, ultimately leading to market failure (see, for example, Dierks 2005; Stiglitz 2003; Charttrakom n.d.). Nonetheless, some scholars argued that this adverse selection issue can be resolved when sellers provide a guarantee or give buyers some assurance against the risk of related problems, arguing that there is no need for regulatory policy or state intervention (Kay and Vickers 1988).

With regard to the above issue, and according to the theory of constrained Pareto efficiency, the situation where asymmetric information, particularly adverse selection, has an impact on market system: consumers are highly likely to gain the least benefit from the market; and the government may not be able to provide resolution because the government themselves also cannot access the required information that consumers may need for market participation. However, Stiglitz critically argued that the market in the real world is not constrained Pareto efficient. Therefore, government intervention can still be effectively helpful and can help to ensure consumer benefits for everyone in society (Pareto improvement: developments in allocations that makes at least one person better off without making any other person worse off). Therefore, Stiglitz emphasised regulatory intervention to prevent consumers from the disadvantageous impact of asymmetrical information (Stiglitz 2008, 2008a, 1994).

Furthermore, according to Stiglitz, the impacts of externalities on the market will be worse when the issue of information arises. In other words, the issue of information can exacerbate the impact of externalities on the market system and other related issues. Hence, government intervention in response to the problem may be varied from time to time and place to place depending on the externalities (Stiglitz 2008, 2008a).

As revealed above, it reflects that it is highly likely that poor information contributes to irrational decisions being made by consumers, subsequently leading to the poor allocation and distribution of goods and services in the market. Clearly, this issue could aggravate other related problems affecting the system, resulting in disadvantages for consumers.

Third, externalities, known as the external cost, are considered a cause of market failure. The term “externalities” is often used with different meanings. The definition when relating to market failure refers to one individual’s actions affecting the utility of another individual. There are positive and negative externalities, with the former being those that profit others; the latter are those that make others worse off (ed. Cowen 1992 p.2). Charttrakom (n.d p.9) explained that social cost is equivalent to negative externalities. Also, Coase (1960) highlighted that those actions of firms which have detrimental effects on others are referred to as a social cost or a negative externality. It typically takes place in economics when a decision or an action causes cost to individuals or groups but not to the firms making the decision or taking the action (ed. Cowen 1992; Cornes and Sandler 1986; Charttrakom n.d.). These

firms usually do not make a payment to those damaged by their activities, rather, pass it onto consumers; if this is the case, government intervention may be called for. For example, fumes being caused as a result of firms' actions. This pollution has a direct negative impact on people and this is a social cost for the industry, as argued by Pigou (1960, quoted in Greenwood and Preston McAfee 1991pp.103-121).

According to Roberts et al.'s study, there are two methods that can be applied as a solution to this problem (through government intervention); they highlighted the importance of the use of a direct subsidy and of use of a cross-subsidy. The former deals with a tax system; it allows problems to be solved by taxpayers. The latter focuses on the means of increasing prices so that other consumers, not taxpayers, pay for the social cost (Roberts et al. 1991 Ch.2).

In addition, each source interacts with one another; as a result the degree of market failure may escalate. For example, the existence of the power of a monopoly such as collusion in setting high prices by companies; this condition generates pricing inefficiency, undermining the knowledge of consumers since price conveys information, creating disproportionate reaction among consumers and their purchases, and consequently causing inefficient allocation and distribution within the market system (Roberts et al. 1991 p.14), and vice versa, asymmetric information gives rise to market power, as the greater the asymmetric information between firms and consumers, the greater

the power of the firm to lift the price without the disadvantage of losing market share (Stiglitz 2008, 2008a, 2003).

Now, we realise that the scenario of market failure could possibly take place at any time and within any market. All kinds of weaknesses and threats for the market system could become issues affecting the degree of market competition and the market efficiency level, resulting in poor allocation and distribution of resources and disadvantages for consumers. However, the situation could be even worse when asymmetric information occurs. Therefore, we can now see the reason for government intervention as a rational way of resolving the problem of allocation of scarce resource, whereby a market with self-interested agents alone cannot.

(d) Government intervention

As revealed above, market failure has been claimed as justification for government intervention. It is important to now carefully examine the concept of government intervention. This should provide a better understanding regarding alternative ways of dealing with inefficient allocation of resource, and whether or not this can be made through some degree of application of regulations to sustain good outcomes for society.

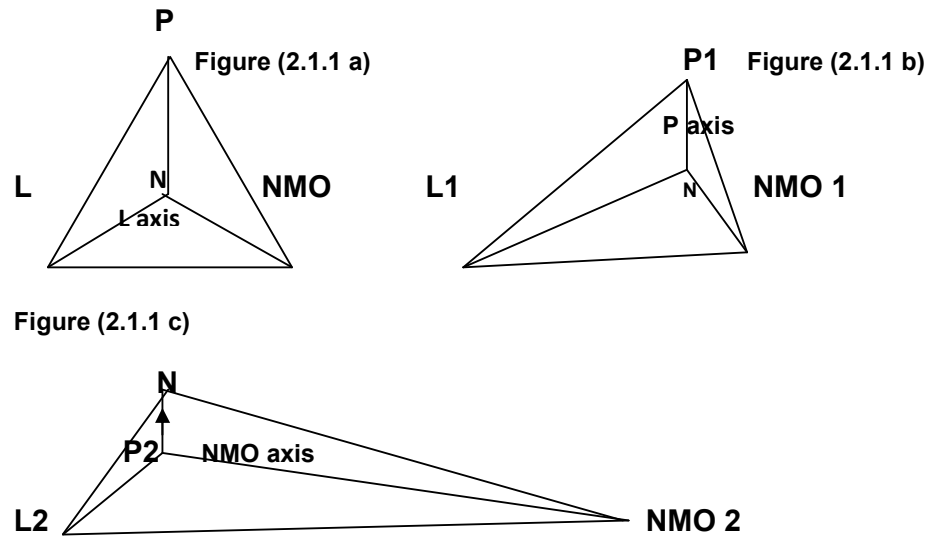
Studies show that the government may take action to correct market failure because a free market will not correct on its own. This action is to improve the allocation and distribution of resource and regulation is a tool used by the government to pursue these objectives in order to ensure the best interests of

society (see, for example, Hackett 2006; Mitchell and Simmons 1994; Asch 1988).

However, the controversy over the role of government when it comes to market failure so as to secure the interests of consumers relates to a disagreement about the application of regulation (because deregulation and regulation is in contrast). Scholars such as Hayek (Steele 2001), Roberts et al. (1991 Ch.2) and Besley (2006 Ch.2) revealed the possible disadvantage that could emerge as a result of government intervention, including uses of regulatory policies and regulations.

For example, Roberts et al. (1991 Ch.2) explained that privatisation and liberalisation are the introduction of deregulation and competition to regulated and monopolistic industries; therefore, the liberalised market and regulation are in conflict. They revealed the 'conceptual model of triangular conflict' which is based on three pairs of opposition, including privatisation, liberalisation and non-market objectives. Within the liberalised market, where the conflict occurs as a result of the use of regulation by the government (through the regulator) to pursue particular objectives, it has inelastic boundary lines between these three pairs (vectors). From Figure 2.1.1a below: N represents the nationalised industries; P represents a lucrative (profitable) transfer to private sector; NP represents the difference in value between nationalised and private industries; L represents liberalisation; NMO represents non-market objectives and the axes represent the extent of

changes emerging in the system; for example, P axis = the interaction of privatisation.



If liberalisation is fully promoted, market prices of goods and services will fall down. It can be seen that P1 is therefore moved closer to N than P, as shown in Figure 2.1.1b. This is a desirable price (P1) as it is low and close to a price offered in the nationalised system. In other words, P1 is being moved closer to the marginal cost. However, in the case that non-market objectives are heavily imposed as a result of government intervention through regulatory policies and regulations, the price may fall even further than P1, and liberalisation will subsequently be impeded. In addition, in a worsening scenario, whereby there is no attempt made for liberalisation as a consequence of significant extension of the NMO axis, then we can see dramatically cheap prices (P2) offered by firms as a result of this action. Prices are set lower than the price offered in the nationalised system, as shown in Figure 2.1.1c. Accordingly, Roberts et al. (ibid.) argued that the

imposition of non-market objectives within a liberalised industry undermines the goals of privatisation and liberalisation because lower prices offered by firms (P2) could lead them to soon leave the market.

An alternative argument opposed to government intervention indicated that an inefficient market is a result of a disequilibrium system, this scenario being the nature of a market, as a market is never in equilibrium because the self-interests of the independent market participants are somehow in agreement while somehow in conflict. It cannot be expected to stay at a perfectly competitive level at all times; however it would find the market adjustment towards equilibrium on its own and finally the entire general equilibrium. This means that government intervention for avoiding a negative consequence of a non-equilibrium market system is not recommended (Bryant 2010; Steele 2001).

Government intervention to regulatory capture

Others argued that the government used its power to enforce regulation to benefit some groups, known as public choice theory. A government's decision-making is based on the preference of interest groups, and the goals of re-election and re-appointment (see, for example, Pierson 2006; Kasper 2002; McNutt 2002).

The theory of public choice, these days, extends into many aspects. However, because this study performs an analysis of regulatory regime in the liberalised market, concerning suppliers, consumers and the regulator, the focus of the

public choice theory presented here is only on the theory and concept of regulatory capture. It is with regard to behaviours of government agencies (the regulators) who are supposed to regulate industries in response to consequences of inefficient allocation of resources or of market failure so as to ensure the goal of public interests. However, the agencies do not act based on public interests but in favour of the interests of the industries. This can be seen as a captured regulatory body that applies regulations for benefits of some interest groups (see, for example, Croley 2008; Pierson 2006; McNutt 2002; Anderson 1981).

The above assumption was also critically argued by Stigler, who stated that *“regulation is used to prevent competition, but the regulatory authorities manage to regulate because of the influence of the industry”* (The Concise Encyclopedia of Economics 2008). According to Stigler’s view, use of regulation by the government agencies in a liberalised system would create the least consumer benefit because regulation is always captured by the interests of the industries. However, many scholars highlighted that Stigler’s theory failed to take into consideration many situations taking place in various industries (Derthick and Quirk 1985; Wilson 1984, quoted in Eberlein 2001 p.32).

Throughout the above discussion, the perspectives of market and market failure and the concept of government intervention in a capitalist market system are in contrast. The point of view regarding an invisible hand and self-interest as elements driving market force found the market as not being

capable to generate the best interests of society in a real world. Market failure is an unavoidable situation in most, meaning that the market no longer meets the conditions of being well-functioning. Government intervention is claimed to be a key way of correcting market failure and of stimulating market efficiency so as to increase consumer benefits. However, application of regulation within the capitalist system remains controversial and has the following conflict interests: 1) whether or not regulation is applied for political expediency in relation to the interests of industries and does not sustain market efficiency; and 2) whether to what extent regulation should be applied in network industries so as to sustain the interests of consumers.

From the above, it is worth noting here that understanding the way the market functions (in the real world) and the regulatory requirement for consumer benefits (government intervention) is very important. Having said that, it is important to understand: 1) what is the most effective perspective in explaining the real-world market of imperfect competition; and 2) which factors possibly lead to the unfavourable situation of market failure (a poorly functioning market where expected benefits cannot be delivered to consumers). These examined details should contribute to an appropriate concept of assessing market performance, whereby the regulator can use it to understand the market system and to take action regarding the appropriate role with which to regulate it. Clearly, this is valuable for providing an analytical framework being used in analysis part of this study.

(e) Stiglitz – government intervention and regulation

As can be seen from the above-discussed issue of market failure there is potential for government intervention with the use of regulation. However, the doubt remains whether this itself can cause problems and distortion. Therefore, it is worth looking at the economic theory of Stiglitz, which has recently become a significant standard tool for studying the appropriate relationship between government intervention through regulation and the liberalised market, especially when the market system has failed to produce desirable/efficient outcomes, and facing weaknesses and threats from inside and outside the system such as poor pricing information (asymmetric information) and economic crisis, respectively.

Reviewing Stiglitz's theory and concept should help to verify the argument regarding the need to improve the regulatory regime being a sustained way to answer the current problem within the UK retail electricity market and to understand what needs to be included in an efficient regulatory regime.

Stiglitz, in his analysis, emphasised that the invisible hand and self-interest of classical economics, which are believed to generate an efficient allocation of resource, cannot always be well-functioning and are highly likely to provide instability (Stiglitz 2009, 2008, 2000). It is important to now ensure sustainable growth for the country through an increased role for the government. Additionally, Stiglitz argued that, in fact, Adam Smith noticed market limits and stressed that business firms could increase profits easily by conspiring to lift

prices rather than developing production with more efficiency, therefore, suggesting the use of anti-trust law (competition policy).

Stiglitz (2009, 2008, 2008a, 2000, 1994) examined the theoretical and empirical weakness of the capitalist market system and provided an explanation for why we need to consider government intervention in 'network industries' and to allow this to occur (network industries are described as the economic entities with a strong policy concern which is inextricably linked to regulation (Crampes 1997 p.2)).

First, he referred to the Pareto maxim, pointing out that *"no one can be made better off without making another worse off within the market system"*. Thus, Stiglitz stressed that government intervention has a greater potential to increase societal efficiency and equity. Lack of social solidarity may increase other costs. Second, Stiglitz suggested that some regulatory interventions are already well-accepted these days, such as competition policy being implemented to control the monopoly power and the impact of the abuse of dominant position within the market system (Stiglitz 2008, 2008a, 1994).

Third, he stressed that the current global financial crisis and the recognition of high costs clearly reflect the need for government intervention in the event of poor performance by institutions and regulatory agencies. Policy intervention regarding social protection in the current economic climate will help to enhance equal opportunities for everyone in society to benefit from scarce resources (Pareto improvement). Fourth, he argued that still there is the need to have public policy intervention implemented even though markets are

efficient because markets usually fail to produce socially desirable outcomes (Stiglitz 2008, 2008a).

Fifth, government intervention needs to take place to maximise competition (to ensure the high intensity of competition). He referred to a condition of market power that causes critical risks to the economy: those, who are wealthy, increase profits from inefficient allocation of resource. Accordingly, it is important, at some stage, to stimulate competition through interventions. Sixth, Stiglitz highlighted that use of regulation is often aimed to encourage 'constructive behaviour'. He explained that use of regulation is not only essential for preventing harmful effects but *"economies with well-designed regulations can perform far better than those with inadequate regulation because regulation can both enhance markets and protect those who might otherwise suffer in unregulated markets"*.

Finally, importantly, he highlighted that promoting transparency is important and might lead to better resource allocation in a capitalist market system, but this principle alone being emphasised and used in some types of markets against the changed circumstances without government intervention would be considered a weak system (Stiglitz 2008, 2008a, 2000).

According to Stiglitz's arguments above, a clearer view regarding how to improve a regulatory regime emerges. Sustainable growth with healthier policies and regulations toward the interest of consumers is highlighted. Stiglitz can see that the market alone cannot provide essential goods and

services for consumers. Markets may facilitate wealth to gain benefits but the benefits to one are made up from the loss to others, particularly the poor. Additionally, according to Stiglitz, an adequate consumer protection is necessary in response to market failure (because markets always fail in all economies), in order to ensure sustainable development or sufficient benefits for everyone in society; in particular, where we are currently facing the changing environment such as economic crisis, in which resources become more limited and costs are very high. According to Stiglitz, when these conditions emerge, government intervention through regulation is needed.

2.1.2 Regulation in relation to public policy and regulatory policy

Having examined the issues of market and related economic theories, it is worthwhile to now look at the contexts of regulation, regulatory policy and public policy in relation to market failure. With these contexts being reviewed, it should contribute to a better understanding regarding how policies and regulations play critical roles in delivering economic and social well-being for the public as a whole, thereby providing an explanation for improvement in a regulatory regime.

According to Meier (1985, quoted in Eisner et al. 2000 Ch.1), regulation is described as *“any attempt by the government to control the behaviour of citizens, corporations or subgovernments”*. The perspective regarding the relationship between regulation and regulatory policy and public policy is that:

- 1) regulation reflects a form of various employed procedures that is aimed to

be used for designing and enforcing regulatory policy; and many regulatory policies may be required in order to serve a goal of public policy; 2) regulation is characterised by its purpose; and 3) the scope of application of regulation is subject to regulatory policy and the goal of public policy (Sappington 1994).

These perspectives regarding regulation highlighted by Meier and Sappington show that regulation can be extensive. Because this study is with regard to the liberalised electricity market, term of regulation, therefore, refers specifically to 'economic regulation' that governs the electricity sector. Hence, the regulation being focused on is not only aimed to promote economic interest, but is also required to pursue social objectives relating to the interests of consumers (Simmonds 2002 Ch.5). In particular, the latter point is central to the focus of this study. Thus, this section will focus on the regulation that is used for increasing efficient allocation and distribution of resources and for ensuring the best interests of society.

In addition to the above, the role of the regulators is also important (with these the government is excluded); it is concurrently highlighted with issues of regulation in the study, because they are responsible for generating and enforcing regulatory policies and regulations for governing in areas such as energy and telecommunications (Croley 2008 Ch.2).

Efficient regulation and its application to the market

The following discusses the aspect regarding efficient (good) regulation and its application to the market; with this revealed and discussed it should help to

shape improved regulation and its enforcement towards to an ideology of an efficient regulatory regime, in addition, reflecting ways to respond to market failure.

Scholars highlighted that regulation must act, and be seen to act, in the public interest. The factors used for indicating the concept of efficient regulation are varied: efficient regulation mainly needs to be a driving force for transparency, independency, accountability, confidence and trust, proportionality, consistency, target focused, effectiveness, flexibility and fulfilment of necessity (see, for example, Pollitt 2008, 2007; Braithwaite et al. 2007; Rothkopf 2007). This means that efficient regulation can be identified as a tool used to ensure the desirable consequences through posing those principles. According to this, efficient regulation is equal to a combination of merited rules, which help to meet those principles.

In relation to the above, Marjone (1990 pp.1-5) suggested that regulation can be applied for a number of reasons within the market system: 1) regulation is applied to support an economic purpose defending the market from inefficiency such as price cap regulation (see also Bell 2002 pp.66-73); 2) regulation is required to monitor the existence of market power (see also, for example, Defeuilley 2009a; Woo et al. 2003; Macatangay 2001); 3) regulation is needed to protect the public against price discrimination across the different classes of 'consumers' or 'buyers' (see also Coen 2005 p.2); 4) regulation is a significant tool that the government uses for encouraging industries to become more responsive to environmental changes as a result of their

businesses; 5) regulation can be applied when there is a short supply situation, this resulting when service price has increased dramatically; thereby regulation is required for strengthening basic social welfare (see also Corry 2003); and 6) regulation might be used to protect service providers against unreasonably low prices in excessive competitive markets, otherwise this may cause further deleterious results to consumers.

The above shows the perspectives regarding the principle and function of efficient regulation; in particular, two major objectives for the use of efficient regulation, which include social and economic interests, clearly help to provide an understanding about this dissertation's core aim. This is to analyse how regulation can be improved to reflect the principle and with the correct extent of enforcement within a liberalised market system, especially when circumstances change, in order to maximise market efficiency as well as to protect consumers.

2.1.3 Competition policy

Having discussed the issues of regulation in relation to public policy and regulatory policy, it is important to now review competition policy (a product of government intervention) since it was introduced within the liberalised system with the major purpose of making use of rules, laws and regulation. The aim is to maximise competition by controlling monopoly power, as well as minimising other impacts of the abuse of dominant position, in order to serve public interests (Motta 2004; Neumann 2001). As a result of reviewing the policy, we should arrive at a better understanding regarding what principle should be

focused within the regulatory regime. Additionally, viewing the policy should provide a clearer view regarding the role of the regulatory authorities in answering issues within the system such as market power and destructive market.

Competition policy is the set of policies, laws, and regulations which ensure that competition in the marketplace is not restricted in such a way as to reduce economic welfare, and its goals are social welfare or economic and individual freedom. In other words, the policy facilitates uses of regulatory policies and regulations within the capitalist market system to secure or maximise competition towards the goal of greater allocation and distribution of resources for the benefit of everyone in our society (Hwang and Chen 2004; Motta 2004; Neumann 2001). This is part of the benchmark against which to judge what to improve in a regulatory regime.

There are two different levels of competition policy relating to the UK retail electricity market: 1) competition policy at the EU level; and 2) competition policy at the national level (UK competition policy). These two levels are integral because the creation of an internal market is an essential element of EU competition policy ((eds) Hwang and Chen 2004 Ch.1). The former aims to be enforced to generate European market integration; this can be completed by pursuing three critical objectives. First, with regard to anti-trust; competition policy serves as a tool to support market efficiency against 1) market-sharing cartels or collusion, and 2) abuses of dominant positions (it reflects a behavioural intervention). Second, the issue of merger control: this

relates to anti-competitive mergers and/or takeovers (it reflects a structural intervention). Third, with regard to state-aid: government intervention to grants to particular firms is prohibited as this action could undermine competition. Any firms which act illegally against the legislations will be referred to the European Court of Justice (Motta 2004; Cini and McGowan 1998). In addition to this, EU competition policy has been significantly influenced by social factors: promoting choice for consumers was recently seen as a prime concern of the competition policy (European Commission (EC) 2004; Motta 2004; Cini and McGowan 1998).

The latter is the national competition policy of the UK, dealing with an internal liberalised market. The UK Competition Commission (CC) was established under the Competition Act 1998 and the Enterprise Act 2002 and is a public body responsible for supporting businesses and industries with mergers, marketing and regulation as well as for investigating merger control against the uncompetitive environment of the market system (Böllhoff 2005; Motta 2004).

In terms of the relationship between the UK competition policy and social welfare, it has been suggested by Motta (2004 Ch.1) and the OECD (2002 Ch.3) that after the establishment of the Competition Act 1998, competition policy became a key element for the government to develop deregulated markets (maximise competition). The policy stresses that making a market that works well (by controlling market power) is the main strategy to protect consumers.

It may be worth highlighting here that the UK government, the regulatory bodies, and the CC aim to facilitate better competition because benefits for consumers would occur as a result of this economic growth. In brief, economic welfare is expected to reflect consumer welfare, and consumer protection is left to the market and the economy following the UK competition policy, this needing to be adjusted in line with EU law with respect to enforcement against market power and to adequately safeguard consumers. In addition, the regulator has a key role to regulate the system towards these goals.

2.1.4 Social obligation

Having discussed several issues, which include the market, market failure, government intervention, regulation and competition policy, it is important to now look carefully at the issue of social obligation in the context of universal service. This issue is important, particularly during the current economic crisis faced by the UK and other countries, which has resulted in a further unemployment and a rise in the cost of goods and services. In particular, it has had an impact on the UK electricity sector, including the retail electricity market system, the focus of this study.

Examining the issue of social obligation should highlight what has previously been discussed regarding whether or not government intervention through regulation should now be emphasised and implemented. This should reflect to what extent the government, corporations, organisations and individuals may

react in providing benefits to our society, because a perfect market exists nowhere and market failures exist everywhere.

The issue of social obligation has been studied by scholars and linked to subjects such as philosophy, psychology, and sociology. In this section, we will highlight the perspective of social obligation within the capitalist market system. Consumer benefits and protection are focused on as goals of social obligation.

Social obligation refers to a condition in which related parties act in response to general social norm, arising from social facts like agreements, promises, contracts and joint decisions. It also reflects public policies with the monopoly rights in network industries. There are two types of social obligation: one has to be undertaken by the individual and the other has to be undertaken by the state (Carver 2009; Miller 2006; Yarrow 1996)

In relation to the above, social obligation relating to the energy market system was focused on, and this relates to adequate consumer protection. Consumer protection as a form of social obligation is subject to political decision. The government is obligated to deliver a fundamental service to everyone in society while, at the same time, stressing and delivering a fair economic outcome (Corry 2003; Eberlein 2001). This fact relates to the goal of universal service, a practice of providing necessary goods and services, which is comprised of three principles: 1) geographic accessibility; 2) access should be affordable; and 3) access should be equitable (Cherry et al. 1999; Yarrow

1996). Clearly, this reflects the role of government in universal service as firms cannot remain profitable in this situation, and may pass the costs onto other consumers; otherwise they may leave the market sooner.

According to the above, some scholars argued that it is highly likely that social obligation may become critical when it comes to the emergence of negative externalities or changed circumstances such as environmental problems relating to the requirement for environmentally friendly energy, and economic crisis relating to production costs. It is possible to face a severe shortage of goods and services, higher production costs, and, consequently, higher prices for non-vulnerable consumers; therefore, suggesting to shift the focus from competition to consumer protection in network industries such as the electricity industry, this needing appropriate government response, otherwise leading to consumer vulnerability along with poverty (Waddams Price 2010).

Here, an understanding emerges that it is not only true that private markets always fail to provide an adequate level of consumer protection, but also that the impact of externalities would escalate the degree of consumer protection required, this being coherent with Stiglitz's argument above. This clearly guides the focus of improvement in a regulatory regime in this study,

2.2 The UK model of electricity regulation: the regulatory regime applied within the UK retail electricity market

The following documents the main literature contributions to the UK model of electricity regulation for supply sector. This is followed by a review of the use

of regulation, as a form of licence, specifically, focusing on the provision and use of regulatory information. This is used within the relationship between suppliers, consumers and the regulator as a method to promote greater competition and better consumer protection.

The details given will: 1) provide a better understanding with regard to the weaknesses within the existing regulation being applied within supply sectors, including the retail electricity market; and 2) be useful in guiding theme and a suitable theoretical framework that will be used in the analysis section of the dissertation.

(a) The UK model of (utility) regulation

Before reviewing the UK model of electricity regulation, it is important to understand the style of the UK model of regulation being applied within utility sectors. Stern (2001 Ch.6) indicated that the UK model explicitly represents a model of independent regulation, and is only being influenced by small specialist regulatory offices. It is informal in its processes; as a result, the UK model of regulation could possibly result in being less secure and less predictable.

Newberry (2010, 2001) showed that the UK model of regulation has distinctive features: 1) legislation defines duties: responsibility is subject to rules and laws or these specify a general framework of regulation; 2) licences to provide credibility; licences contain the details of the regulatory system and the conditions, which are being used for negotiated restructuring and for

controlling parties towards the general framework; 3) a regulator to insulate from politics; there is a shift in responsibility from the Secretary of State to the regulatory authorities and they would receive guidance from the Secretary of State (see also Simmonds 2002); 4) RPI-X for incentives and inflation: RPI-X represents price cap regulation being used by the government so as to motivate companies to invest for their own benefit and also for the public (Bell 2002; Simmonds 2002; Jamasb and Pollitt 2000); and 5) dispute resolution by the CC; in the event of dispute or disagreement, this independent body is responsible for providing references for investigation regarding all major complaints and enquiries.

Clearly, in this era of liberalisation, the above highlights the key roles of: 1) the regulator through use of licence condition; and 2) the CC through the power of market investigation against anti-competitive practice, in ensuring competition and consumer protection.

(b) The existing model of electricity regulation

Pollitt (2008, 2008b) and Simmonds (2002) presented that the traditional model of the UK electricity regulation of 1990 being organised by the regulator has a distinctive configuration and elements. It is outlined principally by specific legislations, which include the Electricity Act 1989 and its amended versions such as the Utilities Act 2000, the Energy Acts, and by licences (issued under these legislations). Electricity regulation is generally aimed to protect the interests of consumers through promoting competition. The regulator or Ofgem (the Office of Gas and Electricity Markets) has power

under these legislations, including the Utilities Act 2000, the Competition Act 1998, the Energy Act 2004, the Energy Act 2008, and the EU Directives with respect to competition issue and Ofgem's duty towards best regulatory practice or efficient regulatory regime, respectively. In other words, the regulator is responsible for the statutory responsibilities under these Acts and legislations.

The UK electricity regulation is divided into the following sections: 1) generation sector; 2) transmission sector; 3) distribution sector; and 4) supply sector. This dissertation only focuses on the retail electricity market sector; therefore, this chapter will only highlight the economic regulation being used within the supply sector.

The UK retail electricity market (as part of the supply sector) was introduced in 1998 and the use of price cap regulation was highlighted to stimulate competition until 2002, but was subsequently removed because of a significant increase in market participation by householders (Defeuilley 2009a; NAO 2001). Therefore, from mid 2002, Ofgem announced replacement of this regulation of electricity supply via price cap regulation with the use of power of investigation and enforcement under competition policy and law. This reflects a shift in regulatory approach from using price cap regulation as a means to regulate the electricity market to using another form of regulation (market-based regulation) that involves the goal of competition policy (Simmonds 2002 Ch.5).

Nonetheless, EU Directive 2009/72/EC (an amendment to Directive 2003/54/EC), and other national Acts such as the Energy Act 2008 (legislation at EU and national levels) have recently modified the framework for electricity regulation. According to several changing/shifting circumstances such as climate change and other EU targets with regards to social and economic issues and environmental protection, the regulatory framework being issued under these legislations now aims to protect the interests of existing and future consumers while ensuring the sustainable development of the electricity sector. In particular, the amending Directive places emphasis on the interests and protection of electricity consumers, especially on vulnerable groups; therefore, consumer choice and public service obligation are significantly highlighted within it. Additionally, the formation and implementation of laws, regulations and administrative provisions are encouraged in this regard (OPSI 25.01.10 Anderson 2009; Official Journal of the European Union L 176, 15.07.2003).

(c) Licence

Licence is a tool granted and used by government authorities in order to control a range of stakeholders' activities. In this study, licence refers to a set of regulations and conditions granted and used by Ofgem, so as to control the companies' behaviours assumed to have led to market failure. Electricity suppliers in the UK need to be authorised through a licence condition in order to supply energy to consumers. These licences outline the obligations on and duties of each licence holder (licensee). The form and scope of licence is

mainly subject to the varied market structure and the various pace of improvement of the electricity sector (Simmonds 2002 Ch.4).

According to the Utilities Act 2000, licences for electricity supply, which includes the retail electricity market, need to be separated from other electricity sectors and has its own standard known as the 'standard licence condition'. In other words, the current licensing regime consists of a set of standard conditions; each granting requires specific standard conditions (Simmonds 2002 Ch.4). The conditions would allow the regulator to take action if companies behaved inappropriately (Hunt 2002 p.385). In addition, licence conditions may be modified and amended towards specific requirement, including changing circumstances. However, modifications can only be processed through agreement between both the licensee and the regulatory authorities; if there is a dispute the case would be sent to the CC (OECD 2002; Simmonds 2002).

(d) The relationship between suppliers, consumers and the regulator within the retail market in relation to use of a licence regarding provision and use of information

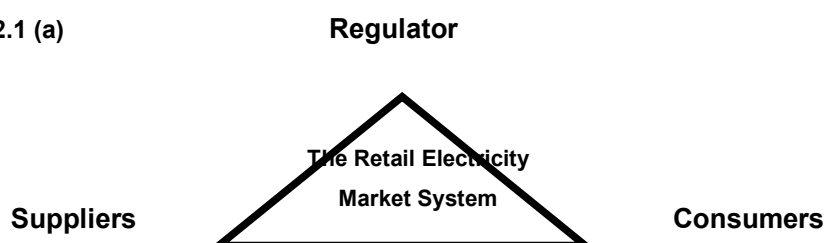
- **The relationship**

Within the retail electricity market there is a relationship between retail electricity suppliers, consumers (householders), and the regulator (Ofgem). Fox et al. (1991, quoted in Ferreira 2006 p.74) suggested that there is an interaction between the three specific components in the general (open)

system: suppliers or competitors; consumers; and the regulator. The interaction between them is regulated by specific functions, skills and applications. Additionally, regulation, competition within the reformed market and consumers are connected and integrally related (Dubash 2001 p.12)

As revealed above, information is added to this relationship and is a key element for market participation as well as for a functioning market; communication within the relationship can occur through a transparent flow of information, which can then be utilised to encourage consumers to engage with the market for informing their choices and for obtaining the benefits of liberalisation (Figure 2.2.1 (a) below).

Figure 2.2.1 (a)



- **Information and licence condition**

Since this study is with regard to the retail electricity market; this section will highlight the perspectives of appropriate/quality price/tariff information being provided and used within the retail market.

It was noted that consumers may have appropriate/sufficient information (such as the cheapest tariff available) from both sides in the relationship:

suppliers and the regulator, and use the details received in their decision-making process. This helps to strengthen competition (although it is never perfect), determining the appropriate price structure in the retail market, and leading to a long-term solution for a well- functioning market as well as for consumer protection (Mayo and Steinberg 2007; Dynner and Franco 2004; Stiglitz 2003).

In order to facilitate market participation by consumers, appropriate information should be easy for the consumer to understand. First, the information provided has to be of good value to the consumer. This means that consumers should be provided with facts relating to the current prices/tariffs being offered by different suppliers. Second, the format and presentation of information is important in helping consumers to understand the information in a way that leads them to make a good decision. Third, information provided needs to be understandable and clear for all types of consumers, especially those with no prior knowledge of the market. Finally, the less cost and time needed for an information search can stimulate the use of information (Mayo and Steinberg 2007; Weil et al. 2006)

The regulator is required to be associated with helping consumers gain access to quality price/tariff information. The provision of information by suppliers to authorities was stated in Condition 5 of the Standard of Condition of Electricity Supply Licence. First, the regulatory authorities are allowed to request information from suppliers; suppliers can find themselves in difficult situations if this information is not provided appropriately to the authorities.

Second, suppliers are required by the regulator, through licence conditions, to ensure that competition and fairness are adhered to by providing quality price/tariff information with the most accurate information possible for consumers to use. This detail shows that Ofgem is responsible for setting standard requirements which must be followed by suppliers in providing appropriate information. Third, other related information required should comprise: 1) a statement of consumption; 2) the efficient use of electricity; 3) the actual energy consumption in comparison to the previous year for the same period; 4) notification of price rises and the right for consumers to change suppliers; and 5) fuel mix information coupled with information on environmental protection and impact (Standard Condition of Electricity Supply Licence 2008; Occasional Paper 2004; NAO 2008b).

In relation to the above, the direct relationship between the regulator and consumers is important. It is the role of Ofgem to encourage consumers to use the information provided and to engage with the market. However, with regard to this objective, Ofgem has been working with other organisations to ensure the interests of consumers such as Consumer Focus (CF) and Consumer Direct (CD) (PAC 2008; Mayo and Steinberg 2007).

The above reflects that, within the relationship between the mentioned three players, there is communication taking place using a flow of market price information, this information being required for market participation by consumers. However, as we have realised from previous discussed theories, this information is never perfect, with asymmetric information existing in the

system, whereby energy suppliers have more information than either energy consumers or the regulator. Particularly 'adverse selection' has been an obvious issue for the UK retail electricity market. Additionally, there is much inappropriate and misleading information provided to the public, which mostly relates to a guarantee strategy used by suppliers. These have all affected consumer decision making and the degree of market failure, and have exacerbated the impacts of related weaknesses and threats (externalities). For this reason, regulation (licence) regarding information is required and needs to be improved in order to frame a provision of information towards consumer benefits.

2.3 An analytical overview of the dissertation's theoretical framework

After reviewing the theories and concepts relating to market failure, regulation and the policy environment in the UK energy context, it is now important to relate several aspects of these to indicate the theoretical framework and boundary of this research, this being used later in the analysis part of the dissertation: 1) for determining what key variables will be examined; and 2) for drawing up the relationships that will be looked for so as to finally analyse an improved regulatory regime as a way to mitigate the current issue. This is to contribute to a larger analysis, as well as to extend the earlier analysis piece of work with respect to the development of the regulatory regime in the UK retail electricity market.

The above-revealed issues regarding concepts, beliefs and theories highlight that the aspect of the use of regulation (licence) to respond to market failures such as in the event of market power has been controversial one. One group strongly argues that current set-up of the market is acceptable and fine as long as it is directed by the government; the market itself can grow and create the best interests for the participants in the real world of imperfect information. Furthermore, they argue that using regulation could possibly create a worsening scenario for the system because it would be captured by interest groups. Another group believes in government intervention becoming a sustainable solution for consumer protection, as this requirement is neither consistently nor adequately provided by the market. In particular, Stiglitz has shown an exceptional argument stressing use of government intervention through regulation in response to the issues of market failure. His argument has gained in importance in network industries, such as the electricity market, when he, in theory, relates the impact of issues occurring inside and outside the system on consumers to the need to have government intervention. Particularly, at this time, when there are many challenges affecting the system, and, clearly, this has turned into the strongest logical argument that applying well to the UK retail electricity market and being valid for the theoretical framework for this study (see section 2.1).

In relation to the above, asymmetric information, complexion, misleading information and changing environments have recently become critical issues in the energy market system. In fact, in the real world of the market system, information is always never perfect and, therefore, we understand that perfect

information cannot be used as a valid criterion against which to judge the performance of the market system and to guide regulation. However, these days, there are more critical issues regarding asymmetric information relating to 'adverse selection', and an increase in confusion and information deception, with these particularly relating to market power. It is true that information can never be perfect in a liberalised market, but it does not mean that an increase in misleading information is acceptable or appropriate information is not required in a competition unit. This is still required for supporting consumers to use their power through market participation.

This issue regarding information, at this time, is adversely affecting the energy market system, as well as millions of UK energy consumers, who need to participate with the liberalised electricity market for their everyday energy consumption. Within the market, householders are the key players in generating demand and in stimulating economic growth, but recently they have been provided with fallacious and inappropriate/insufficient information; particularly, those considered vulnerable are suffering from increases in electricity bill as a result of 1) confusing and deceptive price information received and 2) uncompetitive price setting/information.

Changing environment or 'externality' has been escalating the effects of inefficient market, as well as, generating various undesirable impacts on the system such as economic crisis; and the requirement of EU legislation regarding the environmental protection and the use of renewable energy, etc. Importantly, market participants, including consumers and suppliers, are

currently facing the various consequences of the changing environment, particularly the latter, where renewable resource is required for electricity generation. This important requirement is associated with social responsibility, whereby suppliers have to act socially in response to the environmental issues taking place as a result of electricity generation. Accordingly, energy prices for consumers have been increasing because of new investment in renewable energy generation. Most of this social cost has been passed on to consumers (via pricing information), as firms usually do not pay for this. However, its disadvantageous consequence will be escalated whenever issues of confusing, insufficient and deceptive energy price information are given to consumers. Clearly, we cannot expect energy market system to be self-correcting in this situation.

We understand that the retail electricity market can never be perfect because of imperfect competition and of imperfect information. Clearly, these are not a valid criterion to judge whether regulation is required. However, it is still necessary to find the best way to cope with market conditions, whereby more weaknesses and threats have occurred (inputs of regulation). The market is suppose to face the least asymmetric information and be free from other complication such as a misleading guarantee information in order to be competitive. Having said that, it is important that regulation is used; this will provide an opportunity to secure appropriate information (internal strength) and to decrease weakness regarding provision of misleading and deceptive information, these helping to sustain the interests of consumers.

For the above reason, it is vital to investigate and develop regulations, particularly with regard to information, the most important factor in the retail system which needs to be applied within the relationship between consumers, suppliers and the regulator. According to Stiglitz, inadequate regulation provided always generates harmful effects. He suggested using regulation in response to the issue, especially where asymmetric information and adverse selection have affected the system and the interests of consumers, and arguing that the market system is not a constrained Pareto efficiency. Therefore, government intervention through regulation still can be productive.

In relation to the above, it is also worth noting here that EU legislation has recently focused on protecting consumers, in particular, vulnerable consumers, applying the modified framework for electricity regulation, such as the EU Directive 2009/72 EC (an amendment to Directive 2003/54/EC), as well as the competition policy (at EU level). These have highlighted the way to protect the interests of consumers through a combination of the availability of consumer choice relating to better information, market participation, and use of regulation for better consumer benefits where necessary. Therefore, competition unit cannot avoid government action in supporting better flow of quality information for the interest of consumers.

In fact, the EU regulatory framework and the competition policy at EU level regarding sustainable development of the energy sector and consumer protection are having a significant impact on the policy environment in the UK. For example, the Energy White Paper 2007 and the Energy Act 2008 have

recently been put into effect, introducing a provision of clean and affordable energy for UK consumers. However, to date, as reviewed in Chapter 1, there has not been a significant solution for UK retail electricity consumers, particularly for those who are vulnerable. Instead, unfortunately, a number of people suffering from fuel poverty have been reported, and many of them are having difficulty accessing appropriate/sufficient pricing information.

Ofgem, the UK energy regulatory body, is responsible for regulating the energy sector, including the UK retail electricity market, and has recently received the authority from the EU Directive, the Energy Acts and the Competition Policy to protect the interests of consumers, as well as encouraging them to participate with the market so as to take advantage of the liberalised market and competition. In fact, Ofgem has recently conducted a probe regarding the retail system (see Chapter 1), but there has not yet been any clear resolution of the issues, in particular, to 'adverse selection'.

In summary, in order to analyse and suggest improvement in the regulatory regime in the UK retail electricity market (outputs of regulation), it is important to evaluate the inputs of regulation, including: the weaknesses of the market system in relation to Ofgem's performance and the current problems, particularly, the issue of inappropriate/insufficient information; and the changing environment such as the requirements of EU and national law. Clearly, adequate consumer protection is at the centre of this improvement.

It is clear that this analytical overview provides a conceptual framework and boundary to this study, which is to provide an analysis of the issue of improvement in regulation and its enforcement, through the provision of regulatory information, as the best way to cope with various weaknesses and threats which lead to a reduction in competition. The analysis will be completed with the provision of empirical evidence (shown in the second part of the dissertation); as a result, it should be seen how the issue of the development of the regulatory regime can be dealt with and made to work more effectively.

Conclusions

This chapter has introduced the main concepts of market, competition, deregulation and regulation and their incorporation. The regulatory information relating to the three key players: suppliers, consumers and the regulator, has been discussed and presented in detail. Additionally, the issue of the use of regulation for non-market objectives as a form of social obligation has been highlighted. The theory, the UK model of electricity regulation, and related legislation involving the retail electricity market has been identified. Because price/tariff information within the retail electricity market system remains difficult, as well as changing circumstances having increasingly resulted in a negative impact on households and those living in fuel poverty; an extension to the analysis on the improvement of the regulatory regime within the UK retail electricity market with respect to regulatory information and social objectives has been focused on.

Chapter 3: Literature Review

In the last 20 years, regulation of the UK electric sector has been discussed extensively. Researchers have sought, in general, to achieve economic and consumer interests as a whole. This chapter, literature review, explores the previous studies, identifies past discoveries and discussions and outlines the theories that have significantly influenced investigations during this period. This chapter presents the hypotheses and methodologies of these studies and is followed by an analysis of the weaknesses (knowledge gap) and relationships of the existing research. The knowledge gathered will be used to structure a research theme and argument and to determine and arrange the empirical part of the dissertation. This chapter highlights the value of filling the gap in existing research and provides the academic justification for this study. The aim is to present the background for the research argument of this dissertation in relation to recent findings. This research suggests improvements to the regulatory regime of the UK retail electricity market.

This chapter presents the literature available in three key study areas: 1) economic issues associated with competition policy and the innovation of regulation related to market failure and its effect on consumer interests: Section 3.1.1; 2) the regulatory regime of the UK retail electricity market, as this appealing system has a direct and considerable impact on the public and is currently the focus of many studies: Section 3.1.2; and 3) the impact of national and EU-level regulations on the UK retail electricity market. These three main issues have been topics of much research: Section 3.1.3. Section 3.2 provides discussion and a conclusion.

3.1 Recent studies

The development and analysis of the regulatory regime employed within the electricity system is necessary and has influenced a number of studies, with these investigations seeking to evaluate and suggest a sensible regulatory regime, in order to improve rules and achieve consumer interests, particularly when facing economic crises and changing circumstances. Details of these recent studies reviewed are also summarised in table format in the appendix to this chapter. The table contains related details such as the author(s), year of publication, research topic, examined variables and method. The following paragraphs briefly highlight general discussions and conclusions.

3.1.1 Studies of regulation in relation to economics

The studies of regulation which relate to economic issues have been concerned mainly with market failure. The focus has been on finding and addressing practical models of regulation and its enforcement to resolve the complex issue of poorly functioning markets. Scholars including Newbery, Stigler, and Stiglitz have studied regulation as part of governmental intervention. Despite the number of studies on the use of regulation, no clear consensus has emerged on its use.

Previous research has focussed on the following: 1) the impact of regulation on the allocation of energy resources and resulting drop in energy prices for consumers; and 2) the role of the regulatory bodies in creating appropriate regulations and the means to enforce them to develop/reform the energy sector. Both topics have been influenced heavily by public choice theory and

the notion of regulatory capture, both of which relate to purposive uses of regulatory policy and regulation which are likely to be utilised by politicians for the benefits of certain interest groups (see Chapter 2). For example, an exceptional study by Stigler and Friedland (1962 pp.1-16) looked at the impact of regulation applied to various independent variables and the final price of electricity. Using statistical regression to verify the hypothesis, this study found that regulation applied in the sector neither created an innovative impact on the price trend nor reduced the impact of independent variables on the final price. Regulation was used as a tool to favour particular interest groups, and it led to price increases.

The above study made use of early attempts to understand how an application of regulation affected the interests of consumers and to address the disadvantageous results of some regulatory action. However, this lacked several important perspectives. The study did not investigate other critical sources relating to an inefficient system, such as asymmetric information and other weaknesses and threats. Simply put, regulation and its enforcement changed the situation. Laws regarding market engagement of privately-owned utilities were not introduced until 1992, so the bilateral relationship between consumers and the market did not appear until almost two decades after this study was conducted. Thus, the variables used for this early investigation have been outdated, and the conclusions made by these scholars in regard to regulatory policy do not apply under the liberalisation of both internal and external environments in today's electrical system. Therefore, an additional

study regarding the application of regulation amidst a liberalised electricity system is still needed.

In an era of market orientation

In the era of market orientation, millions of people living in fuel poverty have been the adverse effect of a poorly functioning energy market. For that reason, many economic studies have focused on the effect of changeable degrees of market efficiency on the electricity price, especially prices for householders. This has resulted in two main controversial perspectives. Various studies have advocated not using regulation as a tool to correct the unfavourable consequence of an inefficient market (see, for example, Besley 2006; McNutt 2002; Roberts et al. 1991), but a number of scholars have studied appropriateness of and extent of regulation to eliminate sources of market failure (see, for example, Stiglitz 2008a, 2000; Newbery 2002; Mitchell and Simmons 1994).

Market failure relating to market power and asymmetric information

In relation to the above, many studies have focused on the background, development, and assessment of the liberalisation of electricity sectors and have revealed that the market, including the retail system, has normally failed to deliver reliable electricity service at low and stable prices. Themes of market failure, market power, and asymmetric information, all of which reduce competition, have been studied substantially and viewed as weaknesses in the energy market system, which critically affect the economy and consumer

interests (see, for example, Kwoka and Madjarov 2007; Peerbocus 2007; Thomas 2006, 2002b; Sioshansi 2006; Rowlands et al. 2004; Woo et al. 2003; Newbery 2002; Levi-Faur 2001; Stiglitz 2000; Pollitt 1997; Mitchell and Simmons 1994).

While the issue of information has been included in the analysis on retail competition, the question of how to identify consumer reaction to pricing and market factors has not yet to be resolved. More investigation of the retail electricity market is essential and requires significant evaluation particularly with regard to information flow since asymmetric and poor information as a result of price manipulation and market power (a weakness) can cause further market failure which disadvantages consumers.

In relation to the above issue regarding consumers, information, and education, exceptional researches conducted by Rowlands et al. (2004 pp.272-283) and Ipsos MORI (2008 pp.1-89) revealed the attitude, motivations, and behaviour of residential electricity purchasers, examining who was likely to participate in the market by using information and switching service providers, and investigating what motivates these people to change service providers.

Both studies found that consumers switched service providers because they were offered a better deal with cheaper electricity prices. Their decisions were affected by perceptions about resources used, environmental effects, reliability, etc., while those who did not switch were less interested in price

and more about service. Additionally, the latter analysis showed that most consumers lacked knowledge while making a purchase, and found the information confusing, resulting in them making uninformed choices. Unfortunately, more than half of the switchers obtained a worse deal.

The above brings to attempts to understand the use of pricing information by energy consumers for their market participation. However, some aspects of these studies may be developed further. The provision of information used within the system should be addressed, thus providing a better understanding of the following: 1) how stakeholders manage to use price/tariff information to interact with consumers and support their engagement in the market; and 2) the resulting issue of asymmetric information causing 'adverse selection'. Furthermore, the issue is not only about imperfect information but about deception, scams, and misleading information, with these issues currently leading to a poorly functioning market and millions of UK residents living in fuel poverty. A further study on these issues is clearly required.

Regulation for tackling market failure

Related studies on market failure and the use of regulation by the regulator within the reformed electricity sector found that the market was far from competitive and the reformed system lacked good regulatory models and practices. Interest centres on finding ways of sustaining electricity reformation and market orientation with an adequate degree of competition so as to ensure increased levels of consumer benefits (see, for example, Pollitt 2007;

Rothkopf 2007; Newbery 2002; Levi-Faur 2001; Defeuilley 1999; Tenenbaum 1996).

The themes of market efficiency, market failure, and government intervention have gained importance in their influence on the research problem and hypotheses of many studies. Studies have tried to: 1) identify the necessity to have regulation in the energy market system; 2) uncover an appropriate principle of regulation for the reformed energy market; and 3) find the extent to which regulation can be applied within the system in response to market failure. The studies found various results and suggested different solutions. Nonetheless, the majority of studies confirmed that regulation was a key to resolving market failure in order to protect the interests of consumers (see, for example, Anderson 2009; Bell 2002; Brown 2001; Stiglitz 2000, 1994). The exceptional studies presented below attempted to understand and identify the relationship between the market and regulation.

For example, Brown (2001 pp.1197-1207) examined cost-effective gain (energy efficiency) within the electricity system and the opportunity for consumers to consume energy at the least cost (total cost) in relation to the pressures of market failure and market barriers. The findings showed how existing market failure and related barriers created low use of energy efficiency by consumers. It was argued that this situation must be resolved through governmental action because it could not be solved by private companies.

This study confirmed the appearance and consequences of market failure within reformed electricity sectors and proposed the use of regulation as a sustainable way to strengthen energy efficiency in the public interest. Certainly, the question of allocative and operational energy efficiency is important. But the study did not tackle the complexities associated with other divisions of the reformed energy sector. In actual fact, the retail market sector predominantly connects to consumers, in particular, householders. Therefore, an investigation into the issue of market failure and the use of regulation within the retail system would be valuable. Weaknesses in the retail system relate to the roles of various stakeholders but most adversely affect householders. Thus, an extensive investigation into this sector is still required.

Other researchers have explored the impact of certain regulation on the overall performance of the reformed electricity sector, including an analysis of price cap regulation as a driving force for effectiveness (see, for example, Giannakis et al. 2005; Bell 2002; Sappington 2001). For example, Bell (2002 pp.66-73) studied performance-based regulation (PBR) within deregulated electricity sectors in the US, the UK, and other European countries over the last decade, concluding that effective use of price cap regulation could create desirable results if other components, including incentive mechanisms and benchmarking techniques, were also in place. Most importantly, the study showed that price cap regulation applied for a short period in the UK resulted in lower electricity costs and retail market prices under the introduction of full competition.

However, at this time, price cap regulation can no longer be used in some reformed electricity systems, including the UK retail electricity market. Thus, new questions arise: What regulations can be applied when retail prices increase? How can we improve the retail system to prevent the exercise of market power, etc., in the public interest?

In related investigation, several studies have argued that deregulation of the UK electricity sector has been less beneficial than the regulated system and proposed ending industry reform. They disclosed that electricity prices increased dramatically after the implementation of reform, which resulted in more people living in energy poverty. Additionally, the regulators usually focused on the interests of the industry and on economic issues (see, for example, Anderson 2009; Kwoka and Madjarov 2007; Thomas 2006, 2002b; Macerron 2001). It is worth noting here that it would yield the least by returning to an under-regulated system. In fact, the benefits of reform have been widely observed, such as a significant efficiency gain within generation sectors (see, for example, Pollitt 2007; Dubash 2001; Magnus 1997). Doubt remains only over improved regulation and its enforcement in response to market failure.

Market failure and market power in relevance to competition policy (public policy)

Subsequent studies have focused on the effective use of public policy to tackle market failure and other issues. Studies on competition policy (towards

economy) in response to market failure associated with limited competition and market power issues have been discussed extensively.

Several researchers have investigated competition policy as a means to respond to market power (a weakness) which arises from inappropriate mergers/takeovers. As highlighted in Chapter 2, competition policy provides the regulator with the authority to use regulation to cut market power and other anti-competitive practices, allowing competition to be maximised for the interests of consumers. Most researchers found that market power affects energy price information and argued for adequate intervention by the CC (see for example, Rangel 2008; Green 2006; Rubinfeld 2004; Dutz and Vagliasindi 2000)

For example, an exceptional study by Green (2006 pp. 2532-2541) examined problematic mergers within reformed electricity markets in the UK and other European countries, finding that integration/mergers prevented consumers from benefiting from a liberalised market, because they either were not offered lower prices or did not recognise the differences in prices being offered. He argued for price regulation to benefit those who never switched suppliers, additionally suggesting that competition authorities be more vigilant and attentive. However, Green did not clarify how to ensure an increased degree of competition after a controversial merger occurred. Therefore, an investigation into this issue in order to allowing competition to be maximised in the retail electricity market would be valuable.

A balance between liberalisation and the use of regulation

One exception to this limitation in the literature is the study by Pollitt (2007 pp.1-23), which examined the balance between liberalisation and the use of regulation within the electricity sectors. Unlike other researchers, Pollitt sought to uncover right practices for the reformed electricity sector. His insight was valuable because he neither accepted nor rejected the use of regulation; rather, his broad investigation aimed at identifying the right application of regulation within competitive systems.

The study exposed many cases that called for regulation of electricity prices, service quality, loss of investment, etc. (evaluation criterion). Therefore, it was concluded that efficient regulation was necessary, particularly for those electricity markets. However, Pollitt pointed out that liberalisation and regulation were not mutually exclusive; rather, institutional capability was key to determining the degree of regulation appropriate for restructuring the system and to managing future developments. If existing regulation failed to benefit consumers, it would be an opportunity to strengthen the system through the development of a better regulatory regime. This reflects that the appropriate use of regulation (the outputs of regulation) depends on the degree of the problem (the inputs of regulation, including various externalities and changes in the systemic environment) faced by each country. For this reason, development of the regulatory regime in the UK retail electricity market must be clarified regularly, as this sector has recently faced many challenges and most affects householders.

Disagreement over using regulation to tackling market failure

Many studies viewed regulation as problematic to the growth of the reformed electricity sector, competition, and the public interest. Such economic regulation includes cost-based rate regulation, price cap regulation, market entry regulation, merger regulation, licence conditions, etc (see for example, Littlechild 2009; Suzzoni 2009; Besley 2006).

These studies adopted methodologies and investigations influenced by the themes of market force, inefficient market, government failure, and public choice theory relating to regulatory capture. Interestingly, no studies have provided conclusive evidence of negative consequences arising due to use of regulation.

For example, an exceptional study by Suzzoni (2009) examined the impact of price regulation on the retail energy market and focusing on the uses of regulated end-user electricity/gas prices in Europe. Previously, according to the EC's view (ERGEG 2007a; 2007b), regulated end-user prices would create a negative effect on the retail energy market and competition; the assumption was that low prices would deter investment in technological innovations and encourage investors to leave the market. Additionally, set prices limited consumers from market participation and switching suppliers, leading to an uncompetitive environment within the market (through inefficient price signalling).

Suzzoni's research, however, showed that regulation was not always the cause of problems. This scenario depended upon particular structures within the market system. However, the research indicated that regulation for consumer protection was not recommended and that consumers should understand their right to access information and switch supplier when necessary.

From the above, there was no evidence that the use of regulation within reformed energy markets led to worse results for the public. The argument by the EC over disadvantageous consequences stemming from the use of regulation is not entirely theoretical. It was based on experience gained from other markets (other goods) but not specifically from energy markets. In short, the hypothesis that regulation would unfavourably affect the system and eventually hurt consumers was not supported by the evidence. Instead, the study above identified the regulation used within many reformed energy systems in the majority of EU Member States. Although issues of market power and price manipulation were not investigated, the study indicates that the effect of regulation, such as price cap regulation, depends highly on the system and its environment. Some systems may have the internal strength that negates the call for additional regulation, while some systems may have internal weaknesses along with critical threats from the exterior environment and thus require regulation in order to support the system. This clearly reflects the value of this dissertation.

3.1.2 Studies of regulation in relation to the development of the UK retail electricity market

Since the retail electricity market was introduced in 1998, an increasing number of studies regarding economic regulation have been carried out and have gained importance. Additionally, new directives and laws have been introduced, stressing that improvement in the regulatory regime within the internal retail electricity market is essential to supporting consumer interests (discussed in detail in the next section). Regulation in line with these legislative changes has become the main area of study (see, for example, Anderson 2009; Pollitt 2009; OJ L 176, 15.07.2003).

Various perspectives of regulations applied within the UK retail electricity market

Several studies have focused on the principles and challenges of good regulation in retail electricity supply, such as regulatory transparency, tendering, and innovation. Analysis indicates that householders need transparent tariff information for the supplier-switching process. However, doubt remains regarding the switching rate and actual benefit received by the switcher. Moreover, efficient (good) regulation is subject to some degree of modification due to environmental changes (threats) (see, for example, Pollitt 2010; Pollitt 2007; Balu 1997; Tenenbaum 1996). Changes in internal and external factors of the market system have been noted in searching for a possible framework for an improved regulatory regime. This implies that improvement in the regulatory regime is always necessary because the

system faces the uncertainty of unpredictable changes in politics, economics, society, and technology.

Many researchers addressed the regulatory model of the UK retail electricity market, indicating the advantages and disadvantages of the regulatory regime established for promoting competition within the retail market system and its effects on retail prices and consumers (see, for example, Defeuilley 2009a, 2009b; Levi-Faur 2001; Littlechild 2001, 2009; Thomas 2006, 2002a, 2002b). These have been influenced by several theories, including: market failure relating to mergers, market power, and poor information, competition policy, competition and regulation, efficient regulation, and non-market objectives. The following studies show comparable results.

For example, an exceptional analysis by Thomas (2002b pp.1-11) reviewed the disadvantages of the current structure within the UK retail electricity market relating to the regulatory regime. The findings showed that firms in the UK shifted costs from industrial consumers to householders after price cap regulation was removed from the retail sector in 2002. Mergers were part of the issue, particularly those between the retail and other sectors. The companies which merged with retail suppliers survived on the high profits from significantly increased retail prices during the period after 2002. This clearly highlights the persistent issues relating to market power and mergers in the retail electricity sector.

By contrast, another exceptional study by Littlechild (2001, 2009) looked at the advantage of the current structure within the UK retail electricity market relating to changes in the regulatory regime. He explained that consumer benefits were served through the choices offered after the introduction of full retail competition. He showed that the UK system had the highest switching rate and assumed that those who switched found a better deal with lower prices. It is clear that electricity price reduction for householders was not the prime concern for him; it was, rather, a benefit achieved over time, a result of sustained growth of the retail system via competition and switching supplier.

In related studies, Defeuilley (2009a, 2009b) discussed the evolution of the UK retail electricity market through examining the switching rate, the extent and implications of consumer engagement with the market, along with issues of market power and loyalty, in an examination of how expectations and outcomes had been delivered by the introduction of the retail electricity market and competition.

The findings showed that, to date, the market has not yielded the results expected. People reacted differently to price signals and could not make appropriate choices. While Britain achieved the highest switching rate of the countries studied, the gain reported was low. Defeuilley underlined inefficient price signalling and the findings relating to benefits obtained by consumers not correlating to the switching rate - a fact that indicates a need for further investigation to find a logical explanation. Additionally, a loyalty issue within retail competition is reflected in the fact that UK consumers mainly chose to

switch to big brand suppliers (the companies that they could name). Defeuilley recommended that the system should focus on consumer participation, by both active and inactive customers, by encouraging them to access appropriate information and make good decisions on tariffs. This clearly highlights that the issues of switching supplier and information in relation to benefits gained by consumers represents a weakness and needs further investigation.

Several studies examined and compared the regulatory regimes and retail systems of electricity sectors in many countries, including the UK, indicating the pros and cons of each regime with regard to public interests. These investigations were influenced by the themes of the utility regulation, including the existing model of electricity regulation, as well as other related laws and legislations having an impact on its structure, such as the EU Directives and the national Acts. The findings showed that the role of the regulator in the UK is explicit and vital and fully influences the application of regulation and its effect on the public interests (see, for example, eds Coen and Heritier 2005; Stern 2001; Cave and Stern 1998). In relation to this, however, other studies concerning the performance of the UK energy regulator (Ofgem), indicating a lack of power to regulate electricity sectors due to the control of industry interests at the sacrifice of consumer interests (a weakness). Researchers pointed out that more UK householders would have been better off if Ofgem had been tougher on energy companies, a point calling for further reforms (see, for example, Maclaine 2003; Newberry 2002; Anderson 1981). This

implies that the performance of the regulator is important, needing to be examined regularly in order to determine what to improve.

Additionally, in related studies by Pollitt highlighted various aspects of regulation within the UK retail electricity market. His investigations were influenced by the frameworks of the reformed energy system and of the development of regulation with regard to changes occurring inside and outside the system. First, Pollitt (2010, 2009a) discussed and made recommendations on the future of energy network regulation, including regulation within the retail sector (the RPI-X framework used for regulating Britain's energy network since 1989). The results showed that there was a need to engage with present and future consumers and a need to improve consumer advocacy.

Second, Pollitt (2009b) examined the impact of climate change on the potential regulatory model. The analysis showed that regulation needs to be applied to protect the environment from the pollution produced by the electricity generation sector and supported emission trading to reduce the amount of pollutants. This is to ensure global climate security.

Third, Pollitt (2008) examined and made proposals regarding how the energy network and existing regulation can contribute to a sustainably liberalised energy sector that directly affects consumer interests. The findings showed that regulatory effort to encourage efficient and effective switching and price transparency within the retail sector were necessary. Environment problems

resulting from electricity generation were also highlighted, and it was strongly recommended to bring these to the attention of the regulator (as this is compliant with EU legislation). According to Pollitt, Ofgem's authorities have to audit decisions between suppliers and consumers rather than act as decision maker. Furthermore, Ofgem must focus on the treatment of householders, in particular those who suffer from fuel poverty.

In brief, Pollitt's studies clearly highlighted the role of regulation within the liberalised electricity sector. However, Pollitt did not make it clear how regulation might be applied to help vulnerable people who face difficulties in the switching process or have to pay higher electricity bills as a result of the use of renewable energy. These points reflect the need to identify improvements in the regulatory regime within the retail electricity market in order to reduce the weaknesses and the threats and to help residents.

Other studies have looked at the performance of the UK retail electricity market, using the retail electricity price index, the frequency of electricity blackouts, and improved service satisfaction as indicators of the evolutionary stage of the market and to help establish appropriate regulatory regimes for the market system (see, for example, Pollitt 2009; Ipsos MORI 2008; The Bow Group 2007; Woo et al.2003).

Some studies took a different tact, examining the performance of the retail energy market and proposing a contribution to vulnerable groups as a social obligation. For example, an exceptional study by Baker (2006) investigated

the impact of social tariffs on consumer interests. The study showed that the retail energy system cannot effectively deliver benefits to vulnerable consumers. Grants offered by energy firms for this non-market objective were limited, and many assumed that energy firms transferred these costs to non-vulnerable consumers (the Competition Act limits the extent to which the energy companies can transfer this cost to other consumers). The study highlighted the issue of the social tariff (a weakness) but did not examine to what extent this non-market objective has had an impact on UK electricity price increases.

The Ofgem Probe (Ofgem 2008) recently examined retail electricity market performance. The findings showed that the market has been functioning well; however, consumers have found it difficult to engage in the market due to information issues. Unfortunately, to date, a practical method for resolving this problem has not yet been proposed.

3.1.3 Studies of regulation in relation to the impact of national- level or EU level law/regulation on the UK retail electricity market

The EC has recently addressed many issues relating to the reformed energy sectors, including energy efficiency, renewable energy, and energy markets. As a result, an increase in regulation to ensure a high degree of competition and social interest has been observed in electricity sectors. For these reasons, recently, studies have extensively focused on how this has had impacted the electricity system and, eventually, consumers.

Many studies have examined the history of EC utility regulation and investigated models and levels of regulation applied within many reformed energy sectors. Studies have found that, despite integrated regulation having courted controversy and EU-level regulation not being fully accepted in some countries, EU energy regulation still has a significant impact on European reformed energy sectors and the innovation of regulation, including the UK retail energy markets (see, for example, Rowlands 2005; eds Coen and Thatcher 2001; Eberlein 2001).

For example, one exceptional research by Rowlands (2005 pp.965-974) with regard to the EU Directive (the previous Directive 2003/54/EC) on renewable electricity, which examined the history of the Directive and its impact on regulatory challenges and changes in reformed European electricity systems, including the UK retail electricity market. Because environmental issues and alternative energy resources have recently gained significance for the EC, Member States have therefore been encouraged to develop reformed electricity sectors towards the goal of renewable electricity (through the regulatory regime and enforcement).

The study showed that there have been Green Papers and White Papers relating to renewable electricity, with the latter announcing the EU law and regulation. This indicates the important role the Directive has played in the UK electricity sector, including the retail system. The study also underlined the development of European electricity reform as an evolution significantly influenced by the EU, rather than national law, and entailing various

disagreements. Having said that, since development of the regulatory regime has to be in line with EC law; therefore, it is important to look carefully at EU law and regulation and to relate them to an analysis of improvement in the regulatory regime of the UK retail electricity market.

3.2 Discussion and Conclusions

Discussion

First, previous studies have shown that the reformed electricity market simply failed to deliver low prices for consumers. Electricity price increases are a critical issue, caused by market failure related to mergers, market power, inefficient price signals (relating to asymmetric information), the effect of switching supplier, the cost of the social tariff, and Ofgem's performance. In particular, the biggest weakness was the unresolved issue regarding information. Expectations for lower prices and successful participation by consumers have not been met despite liberalisation and more retail competition. In fact, millions of consumers have been left with worse deals after deciding to switch suppliers. Having noted such events, it is important to understand the relationship between energy price rises and these internal issues/factors.

Second, the studies reflect that development of the regulatory regime is vital to ensuring consumer benefits within the retail electricity supply sector amidst market failure. Competition policy, competition authorities, and regulatory authorities have played a key role in promoting competition and preventing development of an anti-competitive environment, while the use of regulation

toward the goal of competition policy has been found necessary against inappropriate mergers. In this regard, the role of the regulator has been highlighted as having a significant impact on the effective use of regulation to foster public interests as a whole. From these perspectives, studying an improvement in the regulatory regime in relevance to the role of the energy regulator is important.

Third, despite previous studies, in particular the works by Pollitt, which was substantially related to the development of a regulatory model for the electricity sector including the UK retail supply market, no regulatory model has been proposed explicitly to reduce the long-term price-associated risk for householders arising as a result of changing circumstances from inside and outside the system (inputs of regulation), in particular for vulnerable groups for whom electricity price increases have been a major concern. Additionally, despite Pollitt's studies, the important issue of the use of information to create a sustainable way for protecting the interests of consumers has not yet been proposed explicitly. This situation reflects that there is a deficit in regulatory studies, especially associated with asymmetric information in energy sectors.

Fourth, in spite of the regulatory model imposed in European countries, there has been no agreement over how to improve the regulatory regime and its enforcement within the retail electricity market. Moreover, the responsibility of regulatory authorities in the face of future uncertainties has also been unclear. Thus, an appropriate regulatory regime is still needed, particularly one relating

to a sustainable way to safeguard the interests of householders towards social objectives.

Fifth, the importance of creating an efficient regulatory regime to help protect present and future consumers is a prime requirement of the Energy Act 2008 and EU Directives (discussed in detail in the next section). Ofgem has already conducted its probe to investigate the energy retail markets to find out how householders have benefited and have been protected within the competitive market. Unfortunately, their findings seemingly do not reveal the real problem of market failure due to uncompetitive environments and soaring prices. Nor do they suggest an appropriate regulatory regime. Despite the Project Discovery (as previously mentioned in Chapter 1) conducted to reveal the effect of changing circumstances on energy security and consumers, clear measures and regulations to protect consumers have not been proposed. While the promotion of competition has been touted as a solution, competition alone can produce undesirable consequences.

Previous researches significantly highlight the importance of further investigation into the issue of information in the liberalised market, which causes the greatest market failure. This reflects that an improved regulatory regime is clearly required to: 1) resolve information issues relating to degree of competition, consumer market participation and service provider switching; and 2) protect the interests of householders against challenges, particularly relating to internal weaknesses combined with critical threats from the exterior environment faced by the retail system. This study will, therefore, address the

issue of the evolution of the UK retail electricity market in relation to current problems within the system. This will help provide a comprehensive understanding of issues from inside and outside the system. The study will also provide an analysis of the issue of asymmetric information relating to the provision of price/tariff information to provide suggestions for improvement in the regulatory regime. Importantly, the analysis will relate EU-level law and regulation regarding necessary information to an improved regulatory regime for the retail sector (with compliance to EU requirements). This will extend earlier work by taking into account the factors discussed above, particularly asymmetric information in the UK retail electricity market, while considering consumer benefits in a recommendation for an improved regulatory regime.

The task of accounting for the various factors both within and outside the system is very complex. Hence, this study will be based on the relationship between retailers, consumers, and the regulator with regard to internal and external issues, retail price information, and consumer benefits. The recommendations in this study will not only benefit householders, but will also serve the vulnerable people who need clearly-defined regulation to protect them from market-related disadvantages.

Conclusions

This chapter reviewed the literature, hypotheses, methodologies, and conclusions of previous studies. The number of studies investigating the development and performance of the reformed electricity sector and its regulation has increased considerably. This body of work includes this

dissertation, which is aimed at contributing to the extensive literature on this topic of interest. Knowledge gathered from the literature review has contributed to the identification of issues that deserve further investigation. Finally, the study provides an extended analysis of improvements to the regulatory regime within the UK retail electricity market.

Chapter 4: A Historical Overview of the UK Electricity Sector

This chapter gives a historical overview of the UK electricity sector over the past 20 years, when the reformation began, up until now, reflecting where the establishment of the UK retail electricity market developed from and how the evolution has taken place. The article addresses the issues of: 1) the electricity industry structure: Section 4.1; 2) the policy and regulatory regimes: Section 4.2; and 3) the price structure, and simultaneously demonstrates the scenario of continually increasing electricity prices against the consequences of the evolving industry structure and its policy and regulatory regime: Section 4.3. The chapter also attempts to draw out the important perspectives, providing a comprehensive understanding of the background of the research framework in relation to recent issues emerging in the system, and highlighting the appropriate notion of improved regulatory regime against the available evidence, so as to respond to the current problem within the retail electricity market.

4.1 Evolution of the electricity industry structure

The UK electricity industry was initially governed by municipal and regional governments, with later calls for nationalisation in accordance with the Electricity Act 1947. This Act resulted in the generation and transmission sectors operated by the Central Electricity Generating Board (CEGB) becoming owned and directed by the government. The distribution sector, including supply, was governed by the 12 Area Boards, which later became

known as Regional Electricity Companies (RECs) also controlled by the government (Thomas 2002a; Levi-Faur 2001; Domah and Pollitt 2000).

The change in the industry structure reflected the fact that the service, including generating the power and moving the electricity from power stations through the transmission and distribution lines, was only being operated and delivered by the government at that time. The focus of the Act moving towards nationalisation was clearly with the purpose of service provision for consumers by the government, thereby they could have safeguarded and, accordingly, public interest was met.

However, later, there was substantial development of the industry towards a regime of private regulated monopolies or private ownership with very limited competition, as a result of the Energy Act 1983 (Levi-Faur 2001). The change was aimed at opening up access to demand for all generators to the transmission network, and spurring a new trade of electrical energy, as well as removing the entry barriers in the generation sector (ibid. p.56, 65). This also created a transformation in service provision that meant the electricity industry was managed by the private sector, while the regulatory regime and policymaking were still under government control. The transmission network and the distribution boards remained within a monopoly and were obliged to buy power at the cheapest wholesale price offered by any generator, in order to ultimately deliver benefits of competition to consumers (Green 2006, 1998). However, unfortunately, there was a failure in industrial improvement in the early stages of altering ownership, which was justified as insufficient

competition; this was due to the remaining power of the CEGB (Pollitt 1997; Roberts et al. 1991). Changes were introduced with the objectives of increased competition, as stated above; electrical energy was anticipated to be offered competitively in generation sectors. However, the remaining power of the CEGB continued and the government was seen to be continuing to control the regulatory regime, reflecting an unfavourable degree of competition in the industry. Electricity prices could never have been lower as a result of this regime.

As a consequence of the above issues, the focus on development soon moved to the need to have competition largely emerged in the system, by introducing reformation of the electricity sector, as opposed to the existence of a natural monopoly as well as the continuing power of the CEGB (Green 2006; Levi-Faur 2001). Therefore, electricity service was later set to be provided in a competitive market in response to many issues or pressures. These included: 1) an increase in fluctuation in electrical demand, which was difficult to manage and organise because of electricity being a non-storable goods; 2) a reduction in supply because of limited fuel resources, which, generally, were coal and oil at that time, leading to the high cost of generating electricity (Roberts et al. 1991 p.45); 3) a low generating capacity (Bier et al. 2003 p.113); 4) the highly excessive cost of power plant construction, in particular those plants associated with nuclear power; 5) an increased cost because of environmental consciousness; 6) a high maintenance requirement; and 7) an absence of choices available for consumers (Dubash 2001; Macatangay 2001; Pollitt 1997). Clearly, these critical issues escalated

into a severe financial crisis during this time, leading to an intensively disadvantaged impact on the country's growth. Public spending within electricity generation sector was taken into account and needed to be reduced in response to the economic crisis; therefore promoting competition became the case. Investment in technology and innovations was required so as to meet the objectives of increasing competition. Consumers could expect to receive better benefits as a result.

UK electricity privatisation

There was soon a shift in governance to the regime of privatisation in 1989. The electricity industry was genuinely privatised soon after Mrs Thatcher won her third General Election in 1987. The CEGB was split into four different parts; the generation sector was separated into three companies known as National Power, PowerGen and Nuclear Electric. All electricity power stations were owned by the first two companies in the ratio 60:40, respectively. These were privatised except for some nuclear power plants, which still remain part of state-owned companies (Green 2006, 1998; Marshall 2003; Levi-Faur 2001).

The transmission sector became the National Grid Company (NGC) and was owned by the RECs, but was eventually privatised in 1995. NGC is now completely independent and performs as one system. It was responsible for being a 'system operator', soon after the introduction of privatisation, to facilitate competition in a 'pool market', where competing generators offer the lowest wholesale price possible to the transmission network through a bidding

system (Böllhoff 2005; Thomas 2002a; Balu 1997). This system required competing generators to submit and place bids in their respective areas 24 hours in advance, but the bidding was regularly set up every half an hour. The system operator would pay for the successful bidders and arranged the generation schedules together with these companies. A few hours before the period of electricity consumption, the successful generators had to inform the system operator of which power plants could be run for generating that electricity. The buyers would also re-inform the system operator of the amount of power their consumers would need for that certain period of time. This pool market was known as the New Electricity Trading Arrangement (NETA) until 2005 before incorporating Scotland and becoming British Electricity Transmission and Trading Arrangements (BETTA) since, with better facilities to support the efficiency of the wholesale electricity market (Thomas 2006, 2005, 2001; Green 2006, 1998).

Within the distribution sector, the 12 RECs were also totally privatised and separated in 1999. Soon afterwards, the RECs were completely taken over by different generation companies such as London Electricity, PowerGen, and Centrica (Green 2006; Thomas 2002a). Scottish privatisation was also introduced to cope with the debt and, finally, two regional distribution companies and other suppliers responsible for generation, transmission and distribution were set up (NAO 2001; Roberts et al. 1991).

In relation to the above, two associated regulatory bodies were introduced: 1) the Director General of Electricity Supply (DGES), which was responsible for:

ensuring that demand was satisfied; promoting competition in generation and supply sectors; and developing licence conditions and compliance; and 2) the regulator responsible for regulating the electricity industry known as the Office for Electricity Regulation (Ofgem), which predominantly had to oversee how the NGC and distribution lines opened access to demand for generators (Böllhoff 2005; Marshall 2003; Yarrow 1994).

Privatisation was imposed within the electricity industry, creating a restructured industry, and also beginning an era of divided or fragmented electricity sectors, this division and segmentation being explicitly introduced as a way of preventing a monopoly and helping to create a competitive environment (unbundling). This allowed the buying and selling of electrical power to occur through the market base, offering the lowest electricity price with the lowest profit margin by generators through a bidding structure, so as to meet the balance of supply and demand and to create greater satisfaction for consumers.

Clearly, the above reflected an advanced system for service and pricing; however, market efficiency, at that time, was still not fully developed because a completion of privatisation did not happen at once; in fact, this new strategy was gradually imposed. Nonetheless, it certainly highlighted a direct relationship between generators and the transmission network or between competing sellers and buyers (RECs), this relationship becoming a key element within the competitive structure. This act of introducing competitive practices within the wholesale market sector presumably better served the

interests of consumers because wholesale prices were set competitively, resulting in cheaper electricity prices for consumers. This meant that the key practice of consumer safeguarding already moved from direct protection via a relationship between the government and consumers to competition-related protection via a new relationship between consumers, the service providers, and the government-owned transmission networks, which used the market mechanism for determining service prices. Additionally, it could be seen that the two regulatory bodies, DGES and Offer, were pursuing their objectives through promoting competition and reducing barriers to new entry within both generation and supply (RECs) sectors.

Competition after privatisation

After the introduction of privatisation and unbundling, National Power and PowerGen, who owned the majority of the electricity power plants, were enforced to reduce their control and encourage competition to avoid a monopoly within the generation sector. As Marshall (2003) and Roberts et al. (1991) have suggested, these two biggest companies generally held control to increase electricity prices within the wholesale market, and evidence has shown price manipulation. National Power and PowerGen, at that time, had generation capacity of 50 Gigawatts (GW), while the country had generation capacity of approximately 70-80 GW (Thomas 2002a; International Energy Agency 1999b, quoted in Bier et al. 2003). It required private investors to participate much more in generation sectors and the market so as to facilitate better competition. Their power and position in the market were reduced in 1996, as a result of the sale of their electricity power stations, which were

coal-fired and oil-fired power plants, to new investors from outside the UK such as other European companies. As a result of this action more than ten companies became the new generators, such as Innogy (RWE), with generation capacity of 8.0 GW, and EDF, with generation capacity of 5.0 GW (Green 2006; Marshall 2003; Thomas 2002a).

In particular relation to the above details, the use of coal- and oil-fired power plants was considerably reduced and was replaced by gas-fired power plants as a consequence of an increase of new entrants into the generation sector (Thomas 2006; Marshall 2003). This was due to the price of natural gas which, at that time, was much cheaper than coal and oil, along with the fact that it was cheaper to build a gas-fired power plant. Therefore, natural gas became heavily used by new companies and has since become the main fuel for generation (Sharman and Constable 2008; Green 2006). In addition, environmental protection focusing on the reduction of carbon emissions became a prominent issue for the government in response to European Union (EU) requirements, this significantly supporting high use of natural gas in the generation sector (Eberlein 2001).

Although the RECs had not been fully privatised after the introduction of privatisation, they were later successfully transformed. The growing transformation within the RECs was carefully observed; the RECs were still responsible for the sole supply of electricity to householders after the introduction of privatisation, thereby remaining a monopoly, but they had to treat other competitive generators equally, by allowing them access to

transmission and distribution lines so as to deliver a better electricity service to the consumer (Green 2006; Otero and Price 2001; Price and Hancock 1998). This was because consumers, after privatisation, were entitled to buy electricity directly from generators where their electricity requirement was above 1 MW or 1,000 Kilowatts (kW), but this rule was later amended in 1994 so that a consumer requiring electricity above 100 kW could choose their supplier straightaway and could purchase energy directly from the generation sector (Marshall 2003; Bell 2002; Green 1998). Studies have highlighted that while it could be seen that the two biggest companies' market share was reducing to almost below 25% within the generation sectors as a result of the requirement set by the DGES, instead a significant increase in market share of the RECs along with other privately European companies in generation sectors was noticed, contributing to the RECs having the power to choose their own customers with or without placing bid in the wholesale market (Green 2006; Marshall 2003; and Robert et al. 1991)

Breaking down the substantial powers of the two biggest companies in the generation sector while encouraging competition from new entrants, created an equal balance of powers among the companies in determining competitive electricity prices within the wholesale market. Competitive environment within the generation sector reflected a desirable result of the introduction of privatisation. However, it might also have been complicated to organise and control the percentage of market share held by new private investors, while persuading the two big companies to reduce their substantial market share.

At the same time, the RECs were also forced to reduce their control within the distribution and supply sectors; generators could access and offer large consumers a better deal directly, although the benefit of competitive pricing, at that time, was not yet passed on to households. However, these generating companies were seen to be acting to compete with the RECs in supplying an electricity service for large consumers, leading to a significant degree of competition within the supply sector, and large consumers could immediately benefit from this soon after privatisation. Clearly, RECs had developed as both generators, transmission and distribution line owners during that time; and as a result of this vertical integration had become very powerful, reflecting their internal strengths. However, as a result of the changes within the RECs they might have favoured certain types of consumers, as they had the power to control transmission and distribution line charges (as NGC was owned by the RECs until 1995), which rival companies did not thereby possibly creating a semi-monopoly environment. This meant that some consumers, eventually, might have lost benefits. All of these developments to promote competition determined prices and clearly implied how the next steps in improvements within the industry structure and related regulations should be taken.

The regime of ordered competition: an introduction to the UK retail electricity market

The government, however, continued to promote and maximise competition within the electricity sector. A new approach that was introduced towards the end of the 1990s came to be known as the regime of ordered competition (Levi-Faur 2001). The new approach had a particular focus on the introduction

of market-orientation or 'liberalisation', with most effort being given to promoting and maximising possible competition, comprising many buyers and sellers being available within the system, and allowing electricity generators to sell power directly to distributors, retailers, and the consumers (Pollitt 2007). According to the strategy of liberalisation, distribution lines need not be separated from retail suppliers; electricity consumers are offered the facility to directly purchase power from generators or from any other energy supplier along with the right to choose to change their electricity service providers as frequently as they wish (Dubash 2001).

The main two features of this new structure are: 1) the free market mechanism (liberalised system); and 2) the competitive regulation of the market established and applied by the regulatory authorities to ensure public benefits, this reflecting the fact that regulation and competition within the reformed market and consumers are connected (Dubash 2001; Fox et al. 1991, quoted in Ferreira 2006 p.74). This demonstrates the relationship between service providers, all energy consumers and the regulator within the market (an open system), with the latter being formed in June 1999 and fully introduced in November 2000 under the Utilities Act 2000, and known as the Office of Gas and Electricity Markets (Ofgem), which replaced Offer and DGES (Pollitt 2008).

The relationship between the three players began to develop when privatisation and the wholesale market were introduced in 1989. However, the benefits for small consumers were limited and, at that time, householders

could not engage with the market unless their energy consumption was above 100 kW. Therefore, the new focused strategy for increasing competition introduced in 1998, a liberalisation strategy, attributed to greater interaction between the suppliers, the consumers and the regulatory body, providing greater opportunities for all types of consumers to participate with the market, thereby (presumably) creating a competitive environment within the system and resulting in better benefits for all consumers. From this point, it could be said that the competitive market was driven mainly by consumers because they now had the power to buy the service and that sufficiently inspired new investments. Additionally, Ofgem was traditionally at the centre of this relationship, facilitating dynamic interaction and competition within the system and ensuring that demand was satisfied along with development of the new regime.

The UK retail electricity market officially began in 1998 after the passing of the Competition Act 1998 in response to the requirement for full competition within the electricity sector (NAO 2001; Green 1998). Significant changes were observed as a consequence of the introduction of retail electricity competition.

First, the RECs were completely split up in 1999 and sold to various companies from France, Germany and the US, such as EDF, E.ON, and Aquila, respectively, despite geographic issues. This movement created 12 licensed distribution network operators (DNOs) in England and Wales and two DNOs in Scotland. These companies operated their distribution services and

set service costs under the price cap regulations. Some firms purchased electricity power plants within the generation sector and also invested in distribution networks, thereby creating a powerful vertical integration, which meant that they became the owners of both the power stations and distribution lines. For example, in 2002, Aquila became an electricity generator that also invested in the distribution network (Green 2006; Thomas 2002a).

Changes and unbundling continued for at least another five years with some companies merging with others and/or being taken over by others, showing movement towards both vertical and horizontal integration, and finally leading to a restructuring of the UK electricity sector, especially within the distribution and supply sectors. Similarly, in 2007, the 14 licensed distribution networks in the UK became operated by just seven larger companies, including EDF, Central Network, CE Electric, Western Power Distribution, United Utilities, Scottish Power, and Scottish and Southern Energy (Green 2006; Munisamy-Doraisamy 2004; Thomas 2002a).

Second, the change facilitated a substantial emergence of licensed suppliers (licensee), including anyone that could deliver electrical energy to all classes of consumers by competing with other incumbents or companies who, at that time, bought and owned regional distribution networks within the electricity industry. These suppliers did not have to either own the transmission and distribution lines or the power stations but dealt with delivering an electricity service to consumers, which included operating billing, purchasing

transmission and distribution line services from the incumbents, and setting the contracting term, as well as purchasing wholesale electrical energy. Suppliers were fragmented from the distribution network, creating a vertical separation (Pollitt 2007; Yarrow 1994). For example, in 2002, there were approximately 14 electricity retail suppliers with licences delivering electrical energy to final consumers: London, SWEB, SEEBOARD, Eastern, Norweb, South Scotland, Manweb, North Scotland, SWALEC, Southern Electric, Yorkshire, Midlands, Northern, and East Midlands. At the same time six companies were retail suppliers as well as owning electricity power stations: EDF, TXU, Innogy, also called RWE or Npower, Scottish Power, PowerGen (E.ON), and Scottish and Southern Energy. In addition, four companies existed as vertically integrated companies, generating electricity, owning distribution sectors and supplying electricity to final consumers: EDF, Scottish Power, Scottish and Southern Energy, and PowerGen (E.ON) (Green 2006; Thomas 2002a).

Third, consumers were allowed to choose for themselves suppliers who would deliver energy to their houses. This allowed generators, distributors or line incumbents and retail suppliers to directly offer a competitive service to the consumers. Consumers could shop around and make their own choices by choosing and switching to the service provider that suited their needs. Additionally, consumers could choose to buy energy straight from the spot market (Defeuilley 2009a; Woo et al 2003; Dubash 2001).

With regards to opening up full competition within the distribution and supply sectors, selling both the distribution lines of the 12 regional areas across England and Wales and the distribution lines of the two regional areas across Scotland was recognised as a way of encouraging all generators to access demand directly, resulting in a two-way communication whereby a balancing point of supply and demand could be met. This change in the distribution sector reflects an attempt to overcome barriers for new entrants, providing an opportunity for those to enter the distribution lines elsewhere. Cheaper service prices for the consumers should, therefore, be expected as a result of this situation. The important point is that there was an emergence of many vertically integrated companies as a result of the change, such as Aquila, who demonstrated stability and reliability in running their business, but who also had the ability to manipulate high price setting.

Change within the supply sector also took place immediately after the introduction of full competition in 1998; the supply sector has been fully separated from the distribution sector, creating many new investors with the potential to compete with the distribution line owners (incumbents) in delivering service to the consumers. The existence of licensed suppliers reflects the opportunity for consumers to choose their own electricity service from the company that best serves their interests regardless of the area in which they live. This is an expected consequence of vertical separation within the RECs and consumers should also be able to access cheaper deals as a result. However, some of these suppliers might become dominant in a particular area as a result of this new competitive environment. As mentioned,

there were a few companies performing as both retail suppliers and generators. This indicated that presumably these few companies had the potential to determine the price for consumers because of the benefit of being vertically integrated. It seemed that limited competition within the generation sector and the RECs that had happened previously could at that time be reduced, but promoting liberalisation with the aim to enhance competition within the electricity supply sector without good direction, in turn, could potentially cause market power and provide greater disadvantages to some degree. In other words, these companies could become stronger under the new structure of the electricity industry, thereby having the potential to create undesirable outcomes.

In addition, however, the change shows that consumers have become the key driver of sustained development of the electricity industry since 1998, because consumers can now drive the market by choosing to purchase the services on the condition of a better deal being competitively offered.

Summarizing, competition was fully introduced through privatisation, unbundling and restructuring, by separating transmission lines from the generation sector within the CEGB and by separating the supply sector from the distribution network within the RECs.

Recent changes in retail electricity supply

There have been many changes continually taking place within the retail electricity supply sector since full competition started; company set-ups,

mergers, and takeovers have consistently occurred, including small retail electricity suppliers merging with and being taken over by larger electricity suppliers. For example, Scottish and Southern, known as Scottish and Southern Energy (SSE) has recently become the parent company of many small electricity suppliers such as Atlantic Electric and Gas, Scottish Hydro-Electric, Southern Electric, and SWALEC (Green 2006; Deregulation of Electricity Supply n.d.). Importantly, there are now only six suppliers as the key suppliers within the system of retail electricity supply market: British Gas, Scottish Power, Npower, EDF Energy, PowerGen and Scottish and Southern Energy. All of these companies are vertically integrated and have substantially dominated the UK retail electricity market and pricing, having equal market share of the industry in their delivery of electricity to consumers across the country, this implying a sign of market power and collusion (Domestic Retail Market Report June 2007; Green 2006; Thomas 2002a). Clearly, the current structure of the UK retail electricity market being substantially controlled by these suppliers, and it is obvious that there is the potential for high price setting to have been manipulated by them. It reflects a consequence of inappropriate vertical integration within the industry and this disadvantage could lead to continually increasing electricity prices as a result of the undesirable environment.

In contrast to the above, the retail electricity market has had many innovations since the market began in 1998. Some examples are: choices are provided for consumers; vertically integrated suppliers themselves have taken advantage of better technology by using gas-fired power stations to generate

electricity in order to lower the cost and to compete with the incumbents so as to offer a more efficient service to consumers; know-how has been applied within the system to facilitate choices and to create better relationships between suppliers, the consumers and the regulator, including better information being made available online; and consumers can now opt for a service from another provider that is based elsewhere in the UK. These demonstrate the internal strengths within the system as evidenced, which seems to ultimately be approaching the goal of industry reformation that is of greater benefit to consumers.

It is also worth noting here that the issue of externalities substantially account for the degree of growth of the energy system. Other external requirements have also affected the extent of the success of the retail electricity market system. For example, as mentioned, there is a concerted effort to generate electricity using renewable resources, this being a critical threat to the system and leading to a higher cost of generation and more expensive energy for consumers. Summarizing, the current structure of retail supply has already created an impact on pricing structure.

4.2 Evolution of the policy and the regulatory regime

From the early days of electricity industry reformation until the present day developing policy and regulatory regime in line with the changed structure of the industry has become a critical issue because its impacts are related to the performance of the industry, as well as the structure of electricity service prices. This means that policy and regulatory regime could drive the

objectives and the policy goals or the potential to equally meet both social and economic interests.

The Conservative government initially introduced a new strategy of deregulation within the electricity supply industry (ESI) in 1983 towards an energy policy with a new focus on shifting structure of governance from a monopoly state to a competition state, aimed at cutting public expenditure in response to the consequence of economic crisis. However, this strategy could not deliver a successful outcome, as noted earlier, and therefore privatisation was subsequently introduced and implemented within the electricity industry so as to move away from a monopoly system (Marshall 2003; Levi-Faur 2001; Roberts et al. 1991). The Conservative government, at that time, aimed to transfer public monopoly to private ownership because of the need to improve efficiency within the electricity generation sector, with it being noted by scholars that the policy developed could subsequently contribute to reduced power of the government and an emergence of deregulation and competition (Marshall 2003; Pollitt 1997; Roberts et al. 1991). This new approach demonstrated governmental policy and intention to reduce excessive subsidies within the electricity industry; rather protecting consumers by introducing privatisation and not using the provision of services by the state, because the country would not be able to overcome the crisis and protect consumers while having the excessive costs of the old regime of service provision.

4.2.1 Privatisation and changes in the policy and regulatory regime

With regards to the new era of reformation within the electricity industry, privatisation and a changed regulatory regime were simultaneously introduced. The White Paper, *Privatising Electricity* was announced by the Conservative government in 1988, indicating their intention to fully privatise and restructure the ESI. This was followed by the publication of the Electricity Bill, which contained a timetable of the introduction of competition within the ESI, with the aim of a complete reorganisation during the government's tenure (James 2009; Marshall 2003; Roberts et al. 1991).

In addition, the Electricity Act 1989 promoted a privatisation policy by creating legislations for governing the industry and the regulatory bodies. DGES and Offer were established to replace the Electricity Council and were responsible for applying the necessary regulations and licence conditions within the industry (OPSI 25.01.10; Roberts et al. 1991).

The formal regulatory structure facilitating changes in generation, transmission, distribution and supply sector, at that time, was found to be a serious tool to pursue the goal of a reformed electricity industry because it had a significant impact on electricity pricing structure (Yarrow 1994 pp.79-82). Even so, the Conservative government focused on using a policy to support evolving electricity industry reform rather than operating the industry with the strong use of regulations; the regulator was allowed to develop policy substantially on their own (Corry 2003 p.6). Professor Stephen Littlechild was

introduced as the first Director General of Electricity Supply (DGES) and was given the power to create and apply regulation where necessary (James 2009 p.5). The anti-monopoly abuse regulation, for example, was introduced by DGES and used in the pool market to ensure fair bidding and prices. Essential laws of competition and regulation were imposed relating to the associated measures of unbundling and restructuring so as to facilitate a privatised electricity industry (Yarrow 1994).

During the Conservative government's tenure, re-regulation or deregulation was emphasised as a way to minimise entry barriers, and to promote competition and investment, rather than being a method used for promoting social benefits (Corry 2003; Levi-Faur 2001). Implementation of the new system of a privatised electricity industry and completion of all the various stages of the legislative process were marked to end by mid 1991 (Levi-Faur 2001 p.67). Achieving the objectives of systemic transformation was evidenced post-privatisation and included the emergence of: 1) competition; 2) investments; 3) market prices; and 4) opening access for generators to supply sectors etc., leading to a success in reform, but the issue of an uncompetitive environment within the electricity wholesale market still remained afterwards (Yarrow 1994 pp.85-87).

As revealed above, the alteration of the accompanying regulatory regime in line with the privatisation policy was important and had a substantial impact on the degree of competition, scale of investment, and pricing. Changed regulation or deregulation was applied during the stage of implementation of

the privatisation policy, whereby it explicitly had the potential to drive a desirable reformation. Accordingly, the regulatory bodies and innovative regulations accounted for the strengths of the system with their energy market expertise, such as Professor Littlechild showing that the electricity industry had great potential to progress towards the goal of privatisation.

4.2.2 The retail electricity market and changes in the policy and the regulatory regime

In 1998, a liberalisation policy with the introduction of full competition was implemented within the electricity sector, with the resulting structural changes relating to changes in policies and the regulatory regime (Coen 2005 pp.2-4). Small consumers could choose their electricity service providers. This was a consequence of the government policies, which highlighted that the consumers should be given new rights and should benefit from privatisation and increased efficiency within generation sectors should be fully passed onto retail consumers (Littlechild 2009; Roberts et al 1991).

Furthermore, the political aspect also became a main factor in influencing changes within the electricity industry. After Labour came into power in 1997, a shift in the policy and regulatory reform was carefully observed. The Labour government led by Tony Blair took the electricity sectors seriously. Policy and the regulatory regime regarding markets and energy services were reviewed, addressed and published in the Green Paper of 1998 entitled *A Fair Deal for Consumers* (James 2009; Corry 2003; Ofgem 1999). The Labour government's policy was to continue to protect the industry and electricity

consumers through promoting competition and market mechanism, but was also concerned with the use of regulations as key tools to serve both economic and social interests. The focus was on an appropriate way of the use of the regulations and how these could be applied effectively to help deliver decent outcomes (Corry 2003; Coen and Thatcher 2001).

The above details show the role of domestic politics in pressuring changes to focus more on the use of regulation to support the goal of deregulation in a new way, by moving away from exclusively economic concerns such as competition and more towards greater social concerns, in particular, increased consumer benefits. Regulatory regime was clearly the key theme, supported by the Labour government, to increase the internal strength of the market system. This meant that regulation would be used to overcome the previous problems of: 1) the market power of six electricity suppliers as a result of privatisation; and 2) the impact of externalities such as the EU requirements relating to the environment, in order to ensure a fair deal for electricity consumers. This seemed in contrast to the previous focus of the Conservative government to protect consumers through investment and competition with the introduction of unbundling and restructuring without relying on intensive regulation.

Nonetheless, as the Labour government clearly focused on a non-market objective, pursuing greater social interests, it might result in an unprofitable electricity service, and for that reason applying regulation within the retail electricity market system for this purpose may be limited.

Previous articles in Sections 4.2.1 and 4.2.2 highlight changes in the policies and regulatory regimes in the UK electricity sector. The following articles give more detail and specification with regard to influential laws and regulations affecting changes in the policy and the regulatory regime within the investigated system.

4.2.3 EU Directives, the Electricity Act 1989 and the Competition Act 1998

The EU Directives of 1996 (Directive 1996/92/EC) supported Member States to consider imposing energy market liberalisation, but only emphasised the issue of benefits to large consumers and the third party access policy (access to the system). Full competition that had been implemented within the UK electricity industry at that time had developed greater progressively, compared with the EU requirement; or rather the EU legislation was insignificant for development of the policy and regulatory regime applied within the UK retail electricity market (Coen and Thatcher 2001; Eberlein 2001; Yarrow 1994). In fact, other Acts, such as the Electricity Act 1989, set out legislative provision and significantly influenced the extent of the development of deregulation of the electricity sectors. The major change in regulatory regime demonstrating the power provided under the Electricity Act 1989, which included Part One (Electricity Supply), Sections 39, 40 and 41, and Part Two (Reorganisation of the Industry), in respect of social concern and competition, was observed promptly during 1998 and 1999 (OPSI 25.01.10).

Social responsibility policy for householders, in particular for vulnerable groups, was emphasised at that time; this change was reinforced by the Labour government and the energy regulator in accordance with: 1) the Electricity Act 1989, Part Three (Miscellaneous and Supplemental Sections 104-105); and 2) Directive 96/92/EC. The latter requirement mainly related to a common rule for the internal electricity market in Member States. However, it clearly emphasised that the rights of householders and vulnerable consumers were protected as part of the growth of the internal retail energy market regulated by the national regulatory body (OJ L 176, 15.07.2003; Corry 2003).

As soon as Ofgem was established in 1999, they set up a scheme (social action plan) relating to consumer protection in response to the Green Paper, *A Fair Deal for Consumers*, which called for consultation on how energy efficiency, choice and fairness, and protection of householders, particularly vulnerable people, could be provided (Ofgem 1999). As a result, the major frameworks later proposed by Ofgem in establishing regulation in a form of licence obligation: for example, the use of price cap regulation from the start; the provision of clear price/tariff information to assist consumers in making informed choice (with particular regard to vulnerable consumers); and a promotion of energy efficiency as a way to protect poor people. These were what companies had to comply with. Nonetheless, as part of the plan, Ofgem still strongly encouraged the need to develop competition and market participation by consumers as one of the best ways to protect householders and vulnerable groups from facing high energy bills (Ofgem 1999). However,

it was noted by the Economic and Social Research Council (ESRC) that these requirements on suppliers regarding social obligation were by voluntary agreement only; there was no statutory law to support the goal of consumer protection. It appeared that the government and Ofgem only played a small part by way of public relations; indeed not a champion of the consumer (ESRC Societytoday 29.03.10).

Additionally, the Competition Act 1998 was also announced during this period, its main aim being to discourage anti-competitive behaviour affecting consumer benefits as well as to encourage effective competition within the electricity industry, including retail supply (Motta 2004; NAO 2001).

The changes occurred within the policy and regulatory regime as soon as full competition was introduced. There was an attempt to make consumer protection a core part of the retail electricity industry system, and it could be seen that, from the outset, the matter of social responsibility and the use of price cap regulation were focused on by the regulator. This shows that the system had the right start with the appropriate regulatory regime in securing the interests of consumers, because the price cap created a greater potential for increased efficiencies in generation to be passed through to retail electricity consumers.

The Electricity Act 1989 was the key legislation promoting the restructured competitive electricity industry, but the Act does not indicate clear use of regulation for consumer protection; instead, the EU Directive No. 92 of 1996

places greater emphasis on the right of householders and those considered vulnerable to be protected adequately as core to the development of the retail electricity market. Ofgem's performance on this non-market objective was noted to be fulfilling the EU requirement and the government's policy, by developing the new practical regulatory scheme in response to the interests of consumers. The influences of the policy and the EU legislation seemed to support the internal strength of the system, unless these powers were exercised excessively. This could become a significant threat to the retail electricity market system when stringent regulations were applied to force suppliers to take full social responsibility, resulting in a less flexible retail market. The question is to what extent did these regulatory changes on social responsibility have an impact on electricity prices for householders, while private companies, who aimed to make profits, were expected to run electricity services with some degree of non-market objective provided?

4.2.4 The Utilities Act 2000, the Warm Homes and Energy Conservation Act 2000 and the Enterprise Act 2002

In July 2000, another Act was introduced, entitled the Utilities Act 2000, which addressed some important issues raised by the Green Paper 1998, in particular, social concern. This Act was to support companies to have separate licences for each of their business sectors, and to enable Ofgem to regulate the industry in response to various issues, which included protecting consumers, particularly vulnerable groups, by promoting effective competition and a sustained retail market (OPSI 25.01.10; Marshall 2003; NAO 2001). Accordingly, it was seen that the role of Ofgem clearly became an expected

key element of administering the Act and created changes in regulation so as to achieve the goal of improving consumer benefits. In particular, vulnerable consumers were explicitly highlighted in Section 69 of the Act, and Ofgem had to ensure to give priority to their interests (Parliamentary Business 28.03.10; OPSI 25.01.10; James 2009). In addition, details in regulatory change were noticed, emphasising that suppliers should play a major role in operating social responsibility.

Furthermore, a bill regarding fuel poverty was promoted by MPs in Parliamentary sessions and was processed successfully through legislation, resulting in the introduction of the Warm Homes and Energy Conservation Act 2000. This Act aimed to provide power to the government and Ofgem so as to enable householders to have warm homes and to ensure a reduction in the number of people living in fuel poverty (National Energy Action 29.03.10; OPSI 25.01.10). As a result of this Act, a regulatory programme entitled 'Warm Front' was introduced, which was available to everyone in England, not only the poor; funding was provided by the Department for the Environment, Food and Rural Affairs (Defra) but was limited. Other regulatory programmes with the same purpose were also introduced in Scotland and Wales (NAO 2009, 2004).

In April 2002, another regulatory change was observed, where the price cap was entirely removed and market-based regulation was applied; this change moved the focus of how consumers can be protected by using price regulation to reinforcing full competition. Additionally, the Energy Efficiency Commitment

(EEC) was introduced, a regulatory scheme concentrating on energy efficiency improvement as a way to protect consumers and to fight against fuel poverty, this scheme being included as part of a social action plan. It was set up and proposed by Defra but began to be administered by Ofgem in 2002. Again, suppliers were required to deliver this EEC programme (PAC 2007-2008; NAO 2004, 2001; Ofgem 2003).

The Enterprise Act 2002 was introduced, aimed at providing power to the government and Ofgem in establishing an independent public body called the CC (see also Chapter 2). Accordingly, the Commission has an important role when coupled with Ofgem to improve regulation against monopoly abuse and the abuse of market power (Böllhoff 2005).

As mentioned above, the regulatory programme associated with ensuring consumer benefits was developed in accordance with the Acts. The role of Ofgem was highlighted to create regulations to be applied within the system along with enforcing suppliers to take social concern seriously and to make it an obligation. People who live in fuel poverty were intensively focused on and safeguarded through the use of licence conditions, so as to lift them out of poverty. Specifically, after removing price cap, vulnerable groups became highly protected by law because they engaged the least with the market and pricing. It can be seen that there was an attempt to achieve greater consumer protection than previously, as the introduction of energy efficiency was highlighted, this helping to protect consumers from high electricity bills. Clearly, energy efficiency is important and beneficial for both consumers and

the electricity industry itself. Having said that, energy efficiency results in strengths within the retail electricity supply system.

The conflict presumably was the fact that suppliers, in reality, were required through regulation to be a key player in assisting consumers and lifting them from fuel poverty. In fact, it is difficult to identify possibilities where suppliers manage to make good profits while serving non-market objectives. This reflects that the correct degree of use of regulation to ensure consumers are adequately protected without threatening the benefits of others is critical and is still doubtful. Additionally, a new body, the CC, was set up, reflecting an effort to increase the use of regulation so as to protect the system from an uncompetitive situation as a result of the disadvantage of dominant abuse.

4.2.5 Directive 2003/54/EC, a package of better regulation and the Energy Act 2004

From June 2003 until 2010, the Directive 2003/54/EC was promoted with regards to the common rules for the internal market in electricity, and it represented an amendment to Directive 96/92/EC, but Directive 2003/54/EC remained in use until July 2009 before being replaced by the Directive 2009/72/EC. The emphasis on consumer protection, especially vulnerable consumers, was noted in Article 3 of the Directive, in respect of public service obligation and customer protection, stressing that consumers should be able to benefit from the existence of an internal energy market by exercising their rights to switch energy suppliers with access to available choices and transparent and reasonable prices/tariffs in order to obtain a better deal as a

consequence. Any measures to protect consumers from facing the undesirable results of competition such as energy disconnection needed to be brought into force by laws, regulations and administrative provisions. Suppliers were also required to provide related transparent information affecting the interests of consumers, such as sufficient information on bills and fuel resources used in the generation sector and how it had an impact on carbon emission.

Furthermore, Article 23 of the Directive gave certain details about the role of the energy regulatory body, Ofgem, stating that this body should pursue the goals of social and economic cohesion by being entirely independent from the interests of the electricity industry, and by not being captured by the interests of the industry. The Directive encouraged the regulator to create appropriate and efficient regulation in respect of various issues for the efficient growth of the electricity industry, including transparency relating to better information for people, so as to avoid any detrimental impact on consumers. The EC asked for all Member States to comply with this Directive no later than 2004, in order to increase greater electricity market efficiency with sustainable development and to increase the level of consumer protection (Anderson 2009; OJ L 176, 15.07. 2003). In relation to this, the government announced and promoted a 'package of better regulation' to be used in combination with the concept of 'deregulation' in 2004; the aim was to sustain the increased benefit of competition through the focus on good regulation and its enforcement. The regulator is obligated to improve, monitor and assess regulation in response

to this requirement of the government's Better Regulation Agenda (NAO 2008c).

Additionally, the Energy Act 2004 was introduced in July 2004, also concerning the duty of Ofgem to have regard to the principle of efficient regulation and its best enforcement in order to carry out greater market function and sustained competition. The Act also provided the power to Ofgem to contribute to the solution regarding vulnerable consumers who were on prepayment meters, in order to help provide them with access to a cheaper deal (NAO 2004; Ofgem 2003, 2002, 2001, 1999).

Changes in legislation and requirements continued to be the key measure included in reform policy implementation. Consumer protection was supported and became the main focus within the retail electricity market. The perspective of changes in response to the interests of consumers was on the use of better laws and regulations as a key way to promote a desirable outcome. EU Directive No. 54 of 2003 had an influence on improvements within the UK regulatory regime. Choices and better services with transparent information became the best regulatory measures of electricity service provisions, which were expected to assist people who live in fuel poverty. Accordingly, the Directive had a clear instruction for the regulatory bodies to focus on public benefits. Better regulation policy was addressed by the government departments and in the Energy Act 2004, with this being promoted to be included within an appropriate regulatory regime.

Since 2003, that there has been high use of regulation through the introduced form of licence condition making suppliers comply with the regulation and this has happened simultaneously with the attempt to improve the principle of regulation used. It can possibly take some time for the full effects of regulatory changes to occur because using high regulation is usually opposed by suppliers and may lead to an inflexible system as a consequence. These changes in the regulatory regime most likely have influenced the cost of the retail supply sectors as well as the cost of electricity service. This, again, reflects a weakness within the market system because of the conflict between the interests of consumers, the profits of suppliers and the role and duties of the regulator.

4.2.6 White Paper 2007 and the Energy Act 2008

The introduction of the White Paper 2007 took place in May 2007; its challenging focus was on how to ensure affordable energy and a warm home for everyone in our society through improved regulation, while providing energy security across the UK. The focus was partly related to the resurgence of poor relations between Russia and the West, which threatened the security of gas supply, being the main fuel for electricity generation in 2006, as well as final electricity prices for consumers (DECC 31.03.10; James 2009).

The Energy Act 2008 was also announced; the related aspect regarding consumer protection was about the delivery of 'smart meters' as a key solution to protect consumers from facing the risk of becoming fuel poor because they would help consumers monitor and control their electricity

consumption as well as receive accurate bills, resulting in a reduction in their bills and, eventually, lower carbon emission taking place as a result of less energy consumption. Importantly, smart meters will be installed in every household by 2020 (OPSI 25.01.10; Gallacher Personal Interview 10 June 2009).

Additionally, the Act emphasised that Ofgem must protect the interests of existing consumers while ensuring their future interests and must pursue the sustainable development of the industry. This partly related to the volatility in the oil price crisis during 2008 which threatened energy security as well as final electricity prices for householders. Accordingly, Ofgem could work closely with others to ensure desirable outcomes, such as DECC and Consumer Focus. The EEC programme has since been replaced by the programme now known as the Carbon Emission Reduction Target (CERT), which focuses more on the target for improving home energy efficiency (OPSI 25.01.10; James 2009; Ofgem 2009b).

From the above details, a policy and a regulatory regime have been further developed, which focus on consumer benefits and address the need to make electricity affordable for all consumers, while the regulator has statutory duties to ensure energy security as well as sustainable development. The White Paper 2007 and the Energy Act 2008 provide powers for the government and Ofgem to commit to deliver these desirable outcomes to the public. However, these seem to create a significant contradiction within the industry. For example, CERT and affordable energy for all consumers/vulnerable groups

are considered to be non-market objectives and presumably require a changed regulatory regime as an incentive to regulate the industry and command suppliers. This means that some social concerns with appropriate regulations need to be investigated so as to protect non-vulnerable consumers from this social cost and high electricity prices. This detail highlights the potential for long-term disagreement and for a failure or an uncertainty in meeting lower electricity prices. Summarising, the effect of retail supply and market mechanism on service prices is limited as it is related to social concerns along with the use of regulation.

4.2.7 The Electricity Directive 2009/72/EC

The Directive currently being used for all internal electricity systems in the EU, including for the UK retails electricity market, is called 'Directive 2009/72/EC', an amendment to Directive 2003/54/EC (OJ L 211, 14.08.2009). The Directive continues to promote with regard to the common rules for the internal electricity market; it not only emphasises consumer protection and consumer rights through provision of appropriate information as part of universal service obligation, but also encourages Member States to indicate methods to be applied so as to ensure better consumer protection, particularly for those who are vulnerable. Electric metering is the main scheme relating to the long-term solution suggested in meeting sustainable benefits for consumers. The energy ombudsman and consumer bodies are also encouraged to act to help deliver benefits to consumers (ibid; Article 3). Energy efficiency (final consumers are directly related with an efficient use of energy) and an introduction of renewable energy generation and use of green electricity in response to a

sustainable climate change policy are also intensively highlighted. This is required to be implemented in Member States with the aim of a secure supply of electricity, as well as improved benefits for European society (ibid.)

According to the Directive, full unbundling is highly expected to be in effect by March 2012 so as to ensure third party access and transparency, particularly in the transmission sector, these changes in regulatory policy most likely having an impact on retail supply and final prices for consumers, as noted in Article 9 of the Directive.

Furthermore, again, the role of the energy regulatory body, by forming appropriate regulation in respect of various issues, is suggested, similar to the previous EU Directive. Organising the required information exchange for the consumer switching process is also included in their major tasks. Additionally, the regulator is obligated to pursue a high standard of universal service in electricity supply (OJ L 211, 14.08.2009, Article 35, 36).

The above details indicate a redeveloped Directive, with more innovative focus in several areas, such as: better consumer safeguards; a competitive environment in the system (through full unbundling); the role of the regulator; essential data exchange for consumer switching; economic and social cohesion; and sustainable development in response to the issue of climate change. These changes in legislation and requirement are aimed at widening sustainable development of the EU reformed electricity systems toward the achievement of increased economic and social interests. Additionally, working

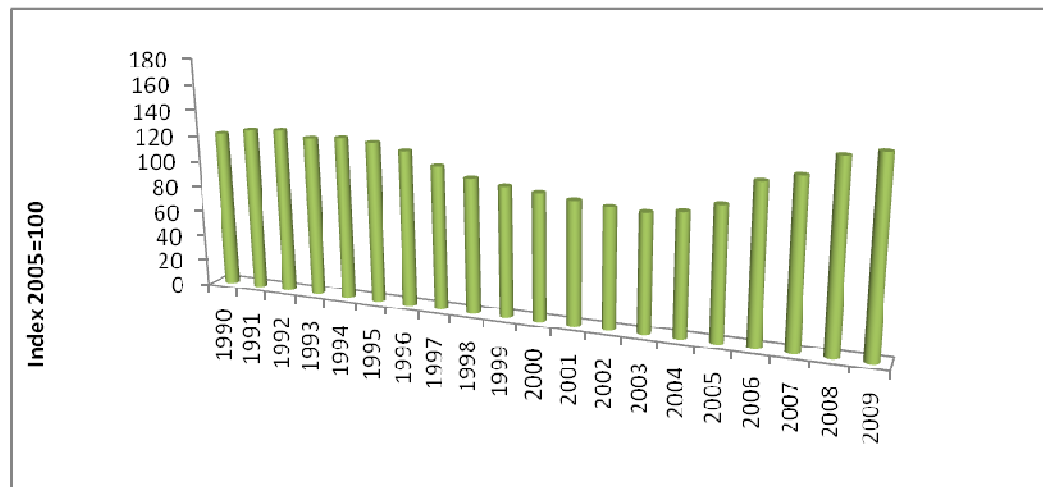
with consumer bodies and the energy ombudsman to increase benefits for consumers is suggested. In comparison to the previous Directive, vulnerable groups are more related to the necessity to ensure adequate consumer protection policy to help lift them out of fuel poor. It shows the focus on consumer power within the relationship between consumers, the regulator, and suppliers. and this is currently gaining importance and is having an impact on the UK electricity system.

4.3 Evolution of the electricity price structure

Electricity prices for consumers, in particular householders, have increased many times since privatisation was introduced in 1989. These unfavourable price movements have arisen from various reasons, resulting in high electricity bills for consumers. The effect of significantly increased prices for consumers, however, is extreme in the UK, which leads to them facing undesirable results, including a rapid increase in the number of them facing fuel poverty, having their electricity supply disconnected, and many elderly people dying during the winter months as a result of hypothermia (The Bow Group 2007; Judge Business School, University of Cambridge n.d.).

Figure 4.3(a) below shows evidence that the UK domestic retail electricity price index has increased considerably since the privatisation policy was implemented; despite the fact that there was a decrease in electricity prices from 1993 until 2003, the overall historical trend shows an increase (DECC Energy Statistics 28.09.09).

Figure 4.3(a): The UK Retail Electricity Price Index between 1990 and 2009



Retail Prices Index = Y axis; Year= X axis;

Source: DECC Energy Statistics

As a result of the above, it is important to now examine price structure in relation to related electricity costs. This should provide a better understanding with regard to electricity price rises.

The impact of the costs of the generation, transmission, distribution and retail supply sectors on final electricity prices

The total cost of electricity is made up from fixed and variable costs, such as the cost of the assets and the required co-ordinations, and the cost of the various fuels used for electrical generation, respectively. For the former, in particular, this includes the exclusively excessive capital costs for the electricity industry, which have an effect on electricity prices and are totally passed on to consumers (Kwoka and Madjarov 2007; Pollitt 1997).

Others have demonstrated a different breakdown of the structure of the UK retail electricity price, showing that this is attributable to a mix of factors. Likewise, it has been noted that approximately 50% of an electricity bill is made up from the generation sectors. This is mainly driven by fuel prices, which vary according to the use of different energy resources. Not more than approximately 30% of the bill is for the network charge, which is paid to the incumbents for the use of transmission and distribution services. The remaining 20% is from suppliers including a charge for the supply services such as energy purchasing process, meter reading, data processing, and other administration costs (Thomas 2002b; Domah and Pollitt 2000).

Some scholars are concerned that other related elements within the generation sectors have a substantial effect on the final electricity price. An example is the reserved power in the generation sectors obligated to be available 24/7; this is due to the properties of electricity that make it impossible to store, and the fact that demand will usually fluctuate throughout the day, it is useful to have reserved power for security and stability reasons to protect against electricity disruption. The minimum reserved power varies between 10% to 15% of total power production and is needed for securing the exceed load at all times, resulting in high fixed costs of assets and operating staff wages, which are passed directly onto consumers (Dr. Atipoang Nuntaphan Telephone Interview 12 February 2009; Kwoka and Madjarov 2007). Additionally, the impact of other facts such as the costs of: 1) the introduction of retail competition; 2) the process of energy procurement; 3) the

rate of return; and 4) taxation are significant and have an impact on retail electricity prices (Thomas 2006; Littlechild 2001; Roberts et al 1991).

In relation to the above, there are two ways of energy purchasing procurement within the retail electricity market: retail suppliers can buy energy either in advance or on the spot. The former is called a 'hedge contract', which helps to defend against the volatility of wholesale and retail market prices; the latter is called 'spot price' which is sold to the wholesale market and is much more expensive than the former (Domestic Retail Market Report June 2007; Otero and Price 2001). In relation to this, according to the two modes of electricity generation, the base load and the peak load generations, purchasing energy in advance on a hedge contract with the use of base load generation is the cheapest deal for retail suppliers, allowing them to deliver electricity at a lower price to the consumers. Hence, managing this in order to purchase in advance is essential and affects the retail electricity price for the consumers (RWE 05.03.09). Additionally, it is worth noting here that final electricity bills for consumers do not represent real-time pricing; in fact, electricity prices fluctuate and are rated hour to hour, so that suppliers are the only ones who know the real cost and the true cost benefit of business; the regulator does not (Borenstein 07.02.09; Corry 2003; Pollitt 1997).

From the above, there are three important aspects regarding the impact of costs from electricity sectors on service prices. First, despite the fact that prices can be affected by costs driven by all sectors, the costs of generation is relatively critical. This clearly affects final prices for householders as a

consequence of movements in fuel costs and the bidding system within the wholesale market. The regulatory use of non-fossil fuels or of green energy resources, for example, can increasingly drive up electricity prices. Purchasing power from the spot market can be very expensive, especially when there is a high fluctuation in demand, and this can become difficult to control and is dependent on the temperature of the weather. This reflects the potential for unpredictable future electricity prices because the above mentioned issues of changes in demand and altered fuel prices occur outside the system (external factors), meaning that these parts are barely controlled.

Second, again, it is realised that prices generally have been driven from all electricity sectors, implying that the vertically integrated companies who own all generation, transmission and distribution sectors, as well as performing as retail suppliers, have excessive powers to manipulate prices. This indicates the disadvantage of the market power of the system and the threats of unfavourable externalities, showing a combination of critical situations affecting price movement which need to be avoided. Presumably, this may be the case why UK electricity prices for consumers have been rising since deregulation of the electricity industry began in 1989.

Finally, there are some issues regarding administrative procedures, which relate to costs of energy but these seem to create less pressure on prices, compared with the consequences of integration and market power.

The effect of restructuring and changed policy and regulatory regime on electricity prices

a) From 1990 to 1992

As shown in the figure 4.3(a), prices started rising immediately in 1990 as a result of the introduction of the privatisation policy within the electricity sectors and, importantly, prices continued to increase until 1992 before dropping for the first time in 1993. Scholars have argued that prices increased between 1990 and 1992 because of the wider share of ownership, resulting in prices increased up to the cost, whereby, previous service prices set under the state-owned electricity industry were not related to marginal cost (it does not reflect the marginal cost). Additionally, the price structure during post-privatisation was left to the market mechanism, supply and demand and uncertainty fully affecting prices (Pollitt 2007, 1997; Dubash 2001; Defeuilley 1999). Furthermore, anticipated high profits for new entrants also led to higher prices for consumers straight after the industry reformation in 1989 (Peerbocus 2007; Dubash 2001).

These above incidents relate to the issues discussed previously in Section 4.1 regarding the consequences of privatisation, including: 1) unbundling; 2) the increase in new generators; and 3) the emergence of the wholesale electricity market. These new competitive players determined wholesale prices through the bidding system as soon as privatisation began, resulting in a significant price movement from 1990. In other words, increased prices were driven by the market or a competitive environment relating to supply and demand.

Moreover, companies all aimed to make profits on their investments; therefore, there was no doubt that prices would increase.

On the other hand, despite it seeming that privatisation brought disadvantages of high prices for consumers during this period, evidence on prices increasing to the marginal cost highlighted the fact that the market solution, at that time, was a sustained way to protect consumers. High debts as a result of the government owning the assets, coupled with poor productivity from the electricity supply industry, and consumers being charged lower than the marginal prices did not demonstrate the potential for the government to continue delivering electricity at low price for consumers.

b) From 1993 to 1998

From Figure 4.3(a) it can be seen that, between 1993 and 1998, post-privatisation, retail electricity prices were decreasing, although prices increased slightly in 1994. The reduction in prices was substantial with the retail price index decreasing from approximately 120 in 1993 to approximately 100 in 1998. Scholars have argued that price reduction as a consequence of privatisation during this period was due to several related facts relating to privatisation.

There were two exceptional arguments justified for the emergence of lower electricity prices. First, the increase in efficiency that occurred within the UK generation sectors, studies showing that private investment was more likely to lead to more efficient and cheaper technologies to better produce energy,

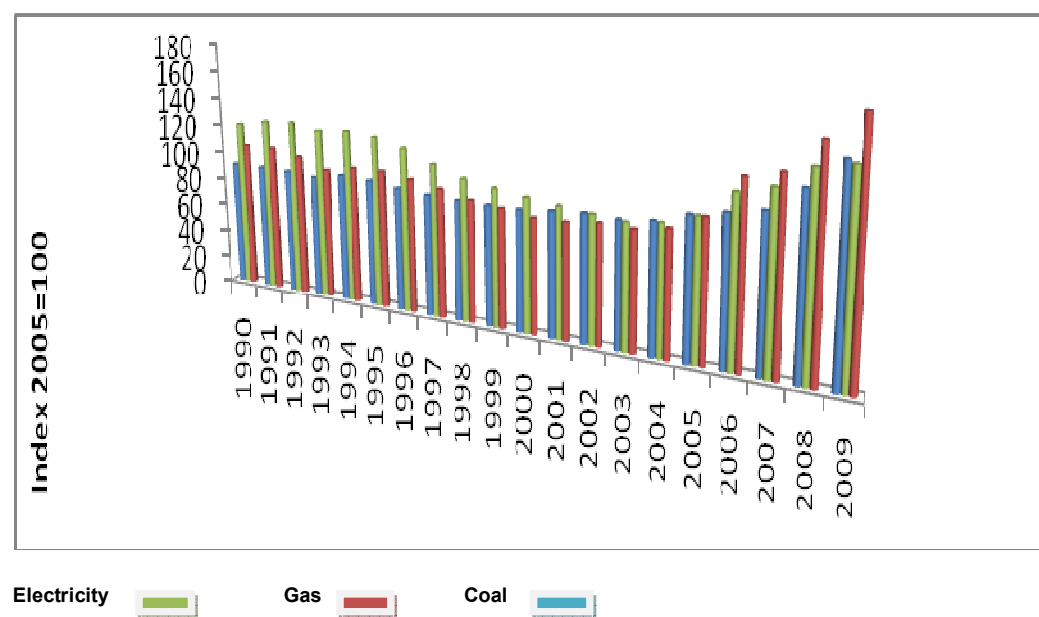
which in turn led directly to lower production costs and electricity prices (Pollitt 2007; Thomas 2006, 2002b; Domah and Pollitt 2001). Second, the decline in the use of coal-fired power plants and nuclear energy for electricity generation created an impact on lowering the cost of electricity bills. The introduction of gas-fired power plants such as the combined cycle gas turbine (CCGT) within the generation sectors by private investors at that time could help reduce the significant capital and maintenance costs incurred by nuclear power plants, as well as lowering carbon emissions and environmental costs. In relation to this, natural gas prices, at that time, were much cheaper than coal and oil (Sharman and Constable 2008; Green 1998).

On the other hand, however, others have argued that benefits that occurred in this period were, in fact, relatively due to global changes such as the reduction in fossil fuel prices, and were not only related to the privatisation policy (Thomas 2004; Price and Hancock 1998; Parker 1997). In other words, decreasing electricity prices emerging between 1993 and 1998 was not only determined by an efficiency gain and lower cost as a result of using gas as a main fuel for electricity generation, but also by other changes.

Nonetheless, seemingly, imposing privatisation led to advantages in this period; although prices were high at the beginning, however, the benefits derived from technology investment, increased energy efficiency, and application of the principle of supply and demand within the market resulted in a steep price reduction, in particular between 1996 and 1998. These all reflect the changes of: 1) the industry structure discussed previously in Section 4.1;

2) removing excessive regulation and barriers for new entry, as mentioned in Section 4.2, subsequently creating a number of new competitive generators accessing demand and offering a cheaper deal for consumers. In conclusion, this indicates that the competition-related consumer safeguard through the market mechanism, at that time (between 1993 and 1998), created greater benefits for consumers, compared with the regulated system. It reflects that the system was strengthened by the restructured industry with the use of an innovative regulatory regime, resulting in benefits for consumers.

Figure 4.3(b): Retail Fuel Prices Index: Electricity, Gas and Coal between 1990 and 2009



Retail Prices Index = Y axis; Year= X axis;

Source: DECC Energy Statistics

Figure 4.3(b) above shows the unfavourable price movements in gas and coal prices, reflecting that these fuel prices substantially affected retail electricity price movements. However, coal prices shown were not higher than those for

natural gas as argued by other scholars. Gas prices may not only have been the reason for the high use of gas-fired power plants in the generation sectors post-privatisation. Most probably, the environmental issue became one of the main reasons.

c) From 1998 to 2003

The decrease in electricity service prices continued from 1998 until 2003, as can be seen from Figures 4.3(a) and 4.3(b). Retail electricity prices sharply decreased during this period. Scholars have looked closely at this change, and indicated that the interests of consumers were met during this period with the introduction of full competition within the electricity industry (Littlechild 2009; Pollitt 2008; Green 1998), despite some scholars such as Levi-Faur having argued that this desirable outcome may end soon because of the increase in gas prices (Levi-Faur 2001 p.73).

Nonetheless, from the above perspective, together with the evidence shown in the above figures, the existence of the retail electricity market, at that time, clearly led to greater benefits for consumers. As revealed previously in Sections 4.1 and 4.2, the introduction of full competition within the electricity sectors has brought changes since 1998; the restructured industry with fully separated electricity sectors as a result of the liberalisation policy allowing bilateral access between supply and demand, along with the use of new regulatory regime, in order to maximise competition. Clearly, these developments focused on the interests of consumers in accordance with new approach of the Labour government starting in 1997. The use of price cap

regulation soon after retail supply was introduced reflects the significant strategy towards consumer protection and the method of motivating suppliers so as to improve efficiency using investment in technology. Changes and improvements within the system created the internal strengths, which significantly affected prices and related to retail price reductions during post-liberalisation until 2003, because consumers then had choices and could choose to pay less. In addition to this, the downward trend in prices could also be a result of the supply-demand principle with the existence of high competition, where the RECs became totally separated and subsequently more competitive low electricity prices were offered across different areas.

d) Post-2003 critical period for energy consumers

The critical period has been since 2003, with retail electricity prices increasing sharply. Scholars and related organisations have indicated the adverse consequences arising from this unprecedented price change, highlighting increased costs for electricity consumers and an increase in the number of people who live in fuel poverty, in particular the vulnerable and those on low income who struggle to pay their electric bills (DECC Fuel Poverty Statistics 07.12.11; The Bow Group 2007). It can be seen from Figures 4.3(a) and 4.3(b) that this disadvantageous situation initially started in 2003, when substantial changes occurred in the distribution and retail supply sectors, this continuing for approximately five years after full competition in the UK electricity system began in 1998, as previously noted in Sections 4.1 and 4.2. These took account of changes in the structure of the system and of developments in the application of accompanying regulatory policy and

regulations. The significant changes with an explanatory table and related discussions are detailed below.

Table 4.3(c): Developments and changes in regulatory policy and electricity price movement from 1989 to 2010

	1989-1993	1993-1998	1998-2003	post-2003 period –now**
Price trend	Upward	Downward	Downward	Upward (Sharply increased)
Policy	Privatisation in 1989	(Post-privatisation)	Liberalisation in 1998 (with full competition)	Five years after adopting liberalisation – unbundling and separated systems are currently continuing to take place.
Accompanying legislation and regulation	-the Electricity Act 1989	-Directive 1996/92/EC	-the Competition Act 1998 -the Utilities Act 2000 -the Warm Homes and Energy Conservation Act 2000 -the Enterprise Act 2002 -Use of price cap regulation which was removed in 2002 -an establishment of Ofgem	-Directive 2003/54/EC -the Package of Better Regulation -the Energy Act 2004 -the White Paper 2007 regarding affordable energy and a warm home for everyone -the Energy Act 2008 -Directive 2009/72/EC
Evolving changes towards the goals of reformation	1) Wider share of ownership 2) Prices were determined by the market mechanism 3) The application of rate of return	1) Efficiency gain from generation sector 2) The decline in the use of coal/oil-fired power plants	1) An emergence of bilateral access 2) Growth in investment (investment in technology) and energy efficiency 3) An introduction of consumer choice and consumer switching process 4) Distribution line was fully separated and there was an emergence of licensed suppliers 5) Ofgem promoted a scheme called “A Fair Deal for Consumers” 6) Social scheme to help those vulnerable introduced in 2001	1) Rapid and extensive merger between various companies 2) Company set-up 3) A number of companies taken over 4) Establishment of the Big 6 = six major energy companies that currently supply more than 98% of UK households, and influence energy security in the country 5) The emergence of issues of information accessed and used by consumers for their market engagement 6) Switching process difficult and complicated 7) Energy companies have played a key role in social obligation through the provision of social tariff after removing price cap in 2002 8) Ofgem has failed both to ensure effective information for consumers and to protect their interests
External changes		1) EU requirements concerning environmentally friendly electricity in generation, transmission, and supply sectors 2) Gas price declined slightly (see Figure 4.3 b)	1) EU requirements concerning environmentally friendly electricity in generation, transmission, and supply sectors 2) Gas price remained stable (see Figure 4.3 b)	1) EU requirements concerning environmentally friendly electricity in generation, transmission, and supply sectors 2) Gas and coal prices have increased steeply since 2003 (see figure 4.3 b)
Fuel Poverty* (see, fuel poverty statistics, DECC 2011)			Downward	Upward (Sharply increased)

* Fuel poverty ratio = required fuel costs (required usage x price)/ income

** The research timeline is fixed which starts from 2003 to 2010.

The author compiled Table 4.3 (c) above using information gathered from: 1) the current situations taking place within the system; 2) the findings gathered from previous studies shown in Chapter 3; and 3) the evolution of the electricity sector highlighted in Sections 4.1 and 4.2, with the aim to demonstrate that developments within the system continued to take place, not only during the period when liberalisation was introduced in the UK electricity sector, but also during the post-1998 period. Growth continued to occur for years after the liberalised market began; however, the most significant scenario has taken place since 2003 or five years after 1998. The most important aspect to look at in the table is with regard to the service price trend increasing sharply from 2003 up until now (2012). This analysis is consistent with the research timeline, which is from 2003 to 2010; therefore, the factors relating to increasing prices occurring during this critical time are examined.

Clearly, the table demonstrates that there were several changes and requirements taking place in line with the moving upward trend of electricity prices during this period. These, as the key factors, can be categorised into two groups, which are the internal factors and the external factors (the situations inside and outside the electricity system). It is important to now look at how these factors affected electricity price movement during that period. Interview findings are also used for examining the current stage of the problem within the UK retail electricity market.

(a) The internal factors

According to the table, the first concern to be discussed is with regard to the internal factors within the system, these being a significant weakness of the system, finally creating a negative impact on electricity prices as well as on householders. This factor includes: 1) the emergence of a number of inappropriate mergers within the whole electricity sector, with, in consequence, only six major firms running electricity services in the country; 2) the emergence of the issue of the information being provided and used by suppliers and householders, respectively; 3) the emergence of the issue of energy switching, which was found to be complex and unfavourable; 4) the social energy scheme/tariff solely offered by energy companies, this creating: 1) poor information for vulnerable groups; and 2) high costs being passed onto non-vulnerable householders; and 5) Ofgem's failure in protecting the interests of consumers. Details are as follows.

First, extensive vertical integration/mergers took place and, in consequence, the establishment of the 'Big Six' companies within the entire electricity sector once privatisation and liberalisation were introduced (see also Chapter 3). This has since become critical since distribution lines were separated in 1998, allowing extensive vertical mergers to continue, particularly between 1998 and 2003 (see also Sections 4.1 and 4.2). This issue greatly influenced the UK electricity system and adversely affected the balance of the supply sector, as it led to a significant reduction in competition within the whole system, including the retail market. In addition, as a result, it affects price

setting/information; thus, consumers were expected to see retail electricity prices increasing during this critical period.

Likewise, as stated in Chapter 2, with regard to the issue of inappropriate mergers relating to extensive vertical integration, theories suggest that it creates a monopoly status, leading to an uncompetitive environment within the system, allowing market power to take place whereby those who own most of the UK electricity sector being able to lift prices without losing market share, and collusion may also occur.

In relation to the above, most interviewees also thought that the sharp increase in electricity prices during the post-2003, including from 2003 to 2010, was related to market power and collusion arising as a result of inappropriate mergers. For example, one commented that the UK retail electricity market is not working well and the competitive environment promoted is limited. He criticised this issue that *“the companies have just been increasing their profit margins”* (S5), and pointed out that *“it was some source of market power (arising from inappropriate mergers)”*. However, he suggested that *“it is very difficult to test that they make such an excessive profit because 4 out of 6 of the companies are part of a much larger international group”*. Similarly, one, from CF, explained that there has been overcharging in retail electricity prices in comparison to the wholesale electricity price trend; however, he has accepted that it is hard to prove this issue as it is not transparent, and argued that *“we have got six firms and they are virtually integrated and they are like 99% of the market now”*; and added

that *“there is no a cartel but I would describe it as being tacit collusion where they (Big Six companies) have had a price leader like British Gas (begin to increase price) and the other five follow them”* (C1). Likewise, the Ofgem representative admitted that it was difficult to oversee their financial accounts relative to the cost benefits of suppliers, saying that *“at the moment we do not know how much suppliers are paying for their gas and electricity because of the vertical integration aspect of things”* (R2).

In short, electricity price rises from the post-2003 period up until 2010 were related to a reduction in competition in the system, whereby fewer firms emerged as a consequence of inappropriate vertical mergers (changes in the structure), and these major firms were able to exercise their market power and created collusion so as to increase prices for final consumers.

Second, there was the emergence of the issue of price/tariff information (asymmetric information), which was provided and used by suppliers and householders, respectively, in the critical post-2003 period, including between 2003 and 2010. Information available within the UK retail electricity market system during this time was found to be inappropriate and appeared to be a key issue relating to a poorly functioning market. This included: inadequate quality information, misleading information; confusion relating to the amount of tariffs; information was too complex to understand; information on energy bills was not qualified and did not help either to promote competition or the effectiveness of the retail electricity market (Hansard HC 10 June 2009; Consumer Focus 2008).

In theory (see Chapter 2), asymmetric information relating to ‘adverse selection’ creates an incentive for sellers (suppliers) to make use of and to provide further unsatisfactory information to consumers for their own benefit. Sellers hold better information than consumers while participating with the market, allowing the former taking this opportunity to manipulate expensive final price for consumers.

In relation to the above, most interviewees suggested that the substantial electricity price rises during the post-2003 period until 2010 were related to the issue of information. For example, one, from Which? told the author that *“70% of consumers find tariffs confusing”* (G1). One said that *“there has been little information to householders to tell them that they can switch and switch easily”* (J2), and adding that *“it is partly due to the complexity of the tariff and the lack of easy information allowing people to switch between different companies”*. He criticised the issue of how people found information confusing, not knowing what the cheapest tariff was, thereby ending up with a more expensive deal, stating that *“it is probably a sign that there is some rogue marketing, particularly from door to door sales people, who are signing people up to new tariffs without them realising that those tariffs are more expensive, because I find it very hard to believe that anyone would switch to a worse deal”*. This implies a situation where consumers did not have adequate quality information and, as a result, a bad product or expensive electricity tariff was more likely to be offered and selected. This clearly reflects a situation of ‘adverse selection’ in the UK retail electricity market.

Furthermore, one, from SimplySwitch, mentioned that *“there have been cases in the past where people have complained that they have been mis-sold to, for example, door knockers, they are not giving out accurate information”* (CS1). One, from CF, gave an example of a deceptive guarantee, saying that *“consumers are promised that if they switch to a certain supplier they will always have cheaper bills and then obviously that does not happen and that has been a big problem”* (C4). One person, from the energy ombudsman team, used his experiences to confirm to the author that *“we occasionally have reasonable evidence that the consumer has been told untruths”* (G2). With regard to this matter, another, from UK Power Limited, revealed that *“some companies claim to be the cheapest supplier; however, it depends what that means”* (CS6), and explained that *“they (suppliers) may claim to be the cheapest supplier based on regional standard tariff so in other words they do not necessary include all available tariffs”*. This discussion shows that consumers were holding less information than sellers while making the purchase and always were misled by them. The strategies of providing a guarantee to consumers, in order to support them make their informed choices while having inadequate quality information was used. It created mis-selling and was not a sustained solution, rather sellers usually had an incentive to take advantage off these consumers.

In short, from the above, electricity price rises during the critical period were related to a reduction in competition in the system. Poor information relating to asymmetric information was used for consumer market participation, resulting in adverse results for them. This unfavourably affected both consumer

switching and consumer power, harming the competitive environment and resulting in ineffective price structuring and a long-term expensive deal for consumers.

Third, switching energy provider has become an issue since the price cap was removed in 2002, including between 2003 and 2010. Unfortunately, the switching process in the UK energy market was frequently found to be complex and repeatedly delivered undesirable results to people who had switched, leading most switchers to end up with worse deals.

In relation to the above, most interviewees highlighted that the unexpected consequences of switching energy supplier related to difficulty in comparing pricing information, this resulting in most people ending up with more expensive suppliers after switching. In addition, however, another issue was also obvious; many interviewees argued that the issue around switching supplier also related to only small savings offered in the market, so it was not worth switching. These all had an impact on suppliers' incentive not to price compete but to continue to offer high prices as taken place between 2003 and 2010. For example, one, from CF, told the author regarding switching supplier that *"most (consumers) understand that there are potentially savings to be made but the savings are not great enough for them to switch"* (C2). Similarly, one, from CAB, stated that *"people are being a bit sceptical about some of the benefits"* (G4) and added that they were not sure that they were moving to a better deal and that something could possibly go wrong when switching, this causing all sorts of problems. Accordingly, the Ofgem representative admitted

that *“we did have concern when we looked into it as to whether all customers were switching to a better deal, and we found that not all of them were”* (R2).

On the other hand, other interviewees have related this issue to attitude, confidence and trust, whereby consumers did not see that it was worth switching. For example, another pointed out that *“there is an issue around trust”* (G1), and argued that *“people do not understand their energy prices and feel there is no control and there is little they can do (in switching)”*.

Alternatively, the switching rate is also of concern. Several interviewees thought that the switching rate was not an appropriate indicator to reflect the intensity of competition within the market as a result of the above discussed issues. For example, one stated that *“switching rate is not the best indicator of how competitive the market is”* (S5). Additionally, he suggested that *“if you are going to look at switching rates you should look at annual switching rates to see if people are switching more than once”*, with this means Ofgem cannot rely on switching rate as a guide for application of regulation.

In short, according to the above, electricity price rises during the post-2003 period up until 2010 were related to a reduction in competition in the system, whereby the switching service provider process was neither functioning nor helping people to achieve expected benefits from the market; with this also relating to consumer confidence and trust, leading a number of them to question whether or not it was worth switching. When people do not regularly exercise their power by engaging with the market and do not switch suppliers,

in return the suppliers become more powerful, maintaining control in manipulating and increasing prices for their own benefits. For this reason, a liberalised market becomes less competitive and prices increase every year.

Fourth, from 2003 to 2010, the social energy tariff appeared to be a key scheme for protecting vulnerable people after removal of the price cap, and was aimed at ensuring reductions in energy costs paid by those considered vulnerable. However, this scheme became a significant weakness within the UK retail electricity system affecting price movement when two issues were related.

Firstly, service provision was based on a voluntary agreement provided by the companies; the companies chose to contribute to social energy tariffs in their own ways and this led to various social tariffs becoming available within the system. Unfortunately, the vulnerable found the scheme information confusing, not knowing how and where to access the cheapest social tariff and ultimately being unable to make the right informed choices. As a result, they ended up paying more for their energy consumption while the companies themselves continue manipulating price by providing them with expensive deals for their own benefits.

Secondly, since the scheme was based only on a voluntary agreement and suppliers were the only providers; this enforcement on companies created regulatory pressure and led to a disadvantage in the system. Dramatically cheap electricity prices offered to the poor by the companies as part of the

social energy tariff can also cause an increase in electricity prices for others (non-vulnerable households).

In theory (see Chapter 2), with regard to conflict occurring when non-market objectives are heavily (or inappropriately) imposed within the liberalised market; with service prices obligated to be lower than competitive prices so as to maintain consumer welfare leads to worsening circumstances whereby the system becomes inflexible. Companies finally will have to increase service prices for other households so as to cover the resources spent on social obligation.

Most participants also highlighted that information regarding the social tariff was complicated, resulting in consumers having poor information for their market participation and finally ending up purchasing a bad product. In addition, several participants also argued about the cost of social tariff being passed on to other non-vulnerable consumers and, hence, electricity prices increased sharply during the critical period. For example, one, from CAB, mentioned that *“the Big Six all have social tariffs but for our advisers it can be somewhat complex to find out because every supplier has their own social tariff; it offers different things to different people and there is no consistency”* (G4), and commented that *“it is quite difficult, sometimes, to understand who offers what, and to whom”*. This clearly reflects a situation where vulnerable groups were not able to obtain appropriate or adequate quality information and either failed to make the right market-participation decision.

The same participant also raised another important issue in relation to the above discussion in that there were a number of people *“who might not be eligible for the social tariffs but who might be really quite poor, struggling to pay for their electricity; in their bills they may be paying additional amount to allow the energy suppliers to offer reductions to someone else”* (G4), with him further arguing that although social tariff is helping some people to move out of fuel poverty, in the same time, it might be pushing other people into fuel poverty. Similarly, one pointed out that *“the more you put on bills, the more you make the poor pay per head”* (C1). Likewise, one person, from EST, spoke to the author regarding the impact of social schemes on non-vulnerable consumer bills, such as CERT, stating that *“although funding comes from energy suppliers but is paid for by consumers (non-vulnerable consumers)”* (C3). Equally, one clarified that *“the truth is that any subsidy to anybody for green tariffs or for poverty is paid for by the energy company and that goes into the people’s bill”* (SS3). This clearly highlights it is difficult to require companies, who aim to gain profits from their investments, either to convey the social tariff to consumers or to ensure universal service across the country; rather, resulting in high energy prices for other consumers.

By contrast, one person, who works in association with energy firms, did not agree to the above point of view, arguing that *“other householders never pay more for electricity to support those who are vulnerable”* (C6). Clearly, this argument rests on insufficient evidence; instead, a number of confirmations highlighted that social costs are being passed onto non-vulnerable consumers.

In short, according to the above, electricity price rises during the post-2003 period up until 2010 related to a weakness of the social tariff scheme. A confusing information of social energy tariff and asymmetric information between those considered vulnerable and energy suppliers allowed these suppliers to keep the vulnerable in fuel poverty, as well as, take the opportunity to manipulate their prices and charge more for a service than the other standard tariffs available in the market. Additionally, once suppliers were required to take part in social obligation, there was a shift in social obligation cost from companies' responsibilities to other consumers.

Fifth, Ofgem were found to be unsuccessful in regulating the UK retail electricity market. There were various critical issues relating to Ofgem's performance in the system during the critical post-2003 periods, including from 2003 to 2010. These issues included: 1) failure in ensuring a lower electricity price for final consumers, this leading to fuel poverty; 2) failure in administering a social scheme, whereby vulnerable groups were provided with complicated information, resulting in them either failing to participate with the market or purchasing an expensive tariff; 3) failure in directing appropriate vertical and horizontal integration in the UK electricity sector, including the retail system, resulting in market power and a reduction in competition; 4) failure in supporting a transparent flow of information in the relationship between the regulator, suppliers and consumers, leading to the emergence of information issues and other related concerns, such as detrimental switching supplier; and 5) failure in maximising the intensity of competition within the retail system. In addition, Ofgem was captured by the interests of suppliers,

by using a light touch on suppliers. This associated with the energy security issue relating to the fact that energy provided in the country is dependent on these companies; therefore, it can be a problem if Ofgem forced investors to stop making more profit.

In theory and the EU requirement, within the relationship between the energy suppliers, consumers and the regulators, Ofgem, as the national energy regulator, has been a key player in ensuring the sustainable development of the electricity sector and in safe guarding consumer protection through competition and must not be directed by the interests of the industry (see Chapter 2 and Section 4.2).

Several interviewees have also highlighted that Ofgem's role and performance (between 2003 and 2010) in relation to steep electricity price increases and consumer safeguards were neither efficient nor effective, and there were insufficient strategies and control exercised by Ofgem; these interviewees arguing that there should have been more immediate action by Ofgem to tackle the problems. For example, one said that *"the problem with Ofgem at the moment is that it sees itself as a go-between between industry and the public"* (J2), with him suggesting that *"Ofgem needs to focus much more attention on the public"*. Similarly, one argued that *"Ofgem has been too close to the industry (energy industry)"* (J3). He highlighted that *"the suppliers have all the power and Ofgem has no power at all"*, and criticised that *"Alistair Buchanan, the chief executive of Ofgem very much comes from an industry background, so he is part of the club"*. Another commented that *"Ofgem is the*

overarching body, which is very much run by the suppliers and not by the consumers” (CS5), and argued that *“they have a vested interest in not seeing the supplier weakened”*. Furthermore, one said that *“Ofgem never referred the market to the CC for investigating the market”* (C1), and commented that, for this critical reason, their role was questioned. These all reflect a scenario where Ofgem was not a champion for consumers, but for the companies. Ofgem agreed with many inappropriate mergers, but was neither able to exercise its powers nor use regulation over the companies. As a result, electricity prices have been increasing since the post-2003 period, this clearly being associated with the unresolved issue of fuel poverty.

In terms of the relationship between market function, competition and consumer benefits, many thought that Ofgem did not exercise their power sufficiently to maximise competition in the system. For example, one argued that Ofgem was not able to improve the competitive levels of the system, saying that *“there has not been much shake-up and the market is very static”* (CS3). Likewise, one confirmed that *“the competitive environment promoted by Ofgem is limited”* (S5). While one argued that Ofgem has been too optimistic about how effective competition is going to be; therefore, a lack of creative or necessary regulation has become an issue in the system (including the retail market) since liberalisation began in 1998. Moreover, he said that *“Ofgem has never, until recently, has any history of finding problems with the companies so I am not surprised that they did not identify a problem and I do not think that they are monitoring the situation well enough”* (S5). Additionally, several participants thought that it would be a truly competitive

market if there were different small firms and not just six big ones. This reflects the vertical and horizontal integration issues and the degree of competition, this not yet being addressed by Ofgem, clearly showing their failure.

Most highlighted an issue relating to the social scheme administered by Ofgem. The issue was that Ofgem did not coordinate with suppliers and related organisations regarding information to ensure who were entitled to these social tariff benefits, as could be seen from the unclear description of the term 'vulnerable consumers'. For example, one stated that *"it is quite hard to identify who is entitled to receive the benefit, for example, it is quite hard to identify people on low income"* (C4); and therefore *"there is a big problem with vulnerable consumers not understanding the tariffs"*.

Alternatively, the group of scholars takes a different view relating to Ofgem's responsibility and performance. For example, one provided a criticism of their performance, which was influenced by what he called 'the culture', and this culture was established when the organisation was set up. The same participant argued that the first regulator, Prof. Littlechild, has clearly influenced the system, saying that *"Prof. Littlechild designed the system and his belief was that regulation of utilities should be a temporary thing until markets take over, he believe that regulators are always inefficient because there is always regulatory capture so he left the regulator with a philosophy, 'a culture' that they were doing a temporary job and they should be doing as little as possible, because everything they did was going to be bad"* (S5). He

added that *“these authorities usually have to keep out of the way of the market because they believe that if they intervene too much they will just make thing worse”*.

Finally, with regard to the retail electricity market system one gave a view on Ofgem’s performance that *“I think they have got themselves in a bit of a mess”* (S6), and commenting that *“in retail markets it is a bit strange, Ofgem kept saying if competition is wonderful; everything is beautiful in the garden and there is nothing wrong and they will not accept any criticism”*.

By contrast to the above relating to Ofgem’s performance, some people give a significant amount of credit to Ofgem against the argument. For example, one noted that Ofgem has usually conducted research to examine the extent to which consumers have engaged with the retail market, and indicated that Ofgem has achieved in ensuring the high degree of retail competition. He said that *“I am not aware that Ofgem is not exercising their power enough as there are quite a lot of obligations on energy companies”* (CS4). One, from EDF Energy, argued with regard to the issue of Ofgem’s duty and performance being captured by the interests of the suppliers that *“that (the allegation) is completely incorrect and both Ofgem and ourselves think quite the opposite”* (SS4), with him adding that *“we disagree with Ofgem quite a lot”*. The Scottish Power representatives also confirmed to the author that the allegation was not true, by giving an example that *“we had a difference of opinion with Ofgem about what they thought the market should be and what the prices in the market should be”* (SS11). However, these seem to be in contrast with the

fact that Ofgem never referred the market to the CC, as interview findings have shown previously.

In short, the above all reflects a scenario where Ofgem has not acted appropriately in response to the weaknesses and the threats of the system. For that reason, electricity price rises during the post-2003 period up until 2010 related to a weakness in Ofgem's performance. In consequence, surely the issues of price rise and fuel poverty have remained unresolved.

(b) The external factors

According to Table 4.3(c), the second concern to be discussed is with regard to the external factors, these being a significant threat to the system and, critically, creating a negative impact on final electricity prices for households during the critical period. This discussed factor includes: 1) EU requirements regarding environmentally friendly electricity in generation, transmission network and supply sectors; and 2) an increase in fuel prices since the post-2003 period, such as natural gas, oil, and coal (see Figure 4.3(b)).

First, since 2001, there has been significant EU requirement regarding an environmentally friendly energy, this clearly resulting in high costs for electricity providers and high prices for consumers. These are associated with resources used, energy product, supply and consumption. The EC has set a target to be achieved by 2020 of a 20% share of renewables in final energy consumption within the EU. An environmentally sustainable system is

expected to be interpreted on a national basis in order to determine better changes for the benefit of European society (see Chapters 2 and 3).

In relation to electricity goods, this requirement forms a significant threat to the system, affecting electricity costs and having an impact on the whole sector, which includes generation, transmission, distribution and retail supply. For example, the use of renewable energy resources and tremendous investments in technologies and innovations aimed at building a renewable energy power station need to be established. Wind turbines, solar panels, hydropower, geothermal power and biomass generators are examples of ways of generating renewable electricity energy.

The current obligation known as the 'Renewables Obligation (RO)' was also established in 2002. This is still in effect and will expire in 2018. This requires all domestic suppliers to provide electricity generated from renewable energy resources at the target set. The suppliers have to prove how they meet the requirement by presenting 'Renewable Obligation Certificates (ROCs)'. In the case that suppliers fail to meet target, it will result in a significant payment (Ofgem Achieved Press Release 2002a; RO First Annual Report 2004; RO Second Annual Report 2005).

Not only the above schemes for generating renewable electricity, but also other related schemes established to achieve a reduction in the carbon footprint through the concept of energy efficiency, have since become a serious concern affecting the whole system and final electricity prices,

including the critical period from 2003 to 2010. In fact, the energy policy has been designed to enable the UK to meet the target of a 20% overall cut in carbon emissions from domestic housing by 2020.

The above shows that not only the goal of the establishment of green electricity power plants but also energy efficiency has been key objectives. These clearly have an impact on UK energy firms since they need to ensure renewable energy technologies and provide grants and offers to help consumers pay for energy efficiency measures and other related schemes. In consequence, these practices, in return, affect final electricity prices for consumers. Evidence supporting the above argument is below.

Importantly, all stakeholders, including the 'Big Six', indicated that the above EU requirement would lead to high energy prices for householders. For example, one commented regarding the impact of renewables on electricity costs, saying that *"costs have been increasing as a result of the green obligations and the social tariff and things like CERT"* (SS3), and he provided an example that *"electricity generation in offshore wind turbines is being talked about at the moment and is massive; and at the moment the only place that can be paid for is on your and my energy bill (consumer bill)"*. He summarised that *"the overall price trend (retail price) is upwards because of the investment that we need to decarbonise our economy and guarantee our supply"*. Similarly, one argued that *"the need to invest in renewable energy generation would certainly push electricity prices up"* (S6).

By contrast, however, DECC noted that this issue may have an impact on energy prices, including electricity, but not on consumer bills because energy efficiency schemes have already been introduced (DECC 2010). It seems that DECC has been too optimistic about this issue and, in fact, the energy efficiency scheme has not yet been made available for every household in the UK but only a small number of people.

In short, according to the above, electricity price rises during the post-2003 period, including from 2003 to 2010, have related to the significant EU requirement, a rising regulatory burden at EU level. Clearly, this issue is found to be a threat to the system, resulting in high costs for electricity providers and higher retail prices for consumers.

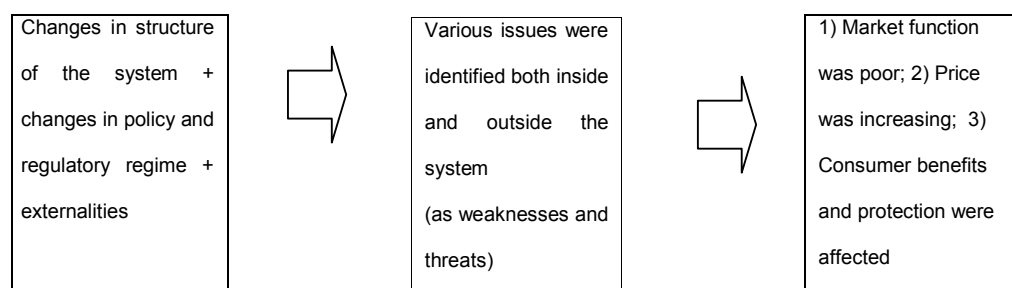
Second, a sharp increase in fuel prices has become a serious issue for the UK electricity system since 2003, including the period from 2003 to 2010 (see Figure 4.3 (b)). It has been argued that the limitation on energy source relative to demand and economic crisis is part of the reason why retail electricity price has been increasing sharply since 2003 (see also Chapter 3). This expensive fuel, a critical external factor, creates an inflexible scenario in which all sectors are affected by the high costs, and this results in expensive electricity.

In theory, the reformed electricity sector is an open system relating to general environment and an increase in fuel prices is a huge threat to the system, creating problem outside the energy sector and, therefore, it is hardly possible to manage the effect.

Interviewees also believe that the impact of higher fuel costs for generation fuel mix on electricity prices is critical and, moreover, in consequence, significantly relates to the security of electricity supply in the country. For example, one highlighted that *“the underlying electricity price is driven by really the price of fuel, such as oil, so the price of electricity has risen more or less in line with the price of fuel”* (CS3). Similarly, the Ofgem representatives commented regarding the issue of rising fuel costs, saying that *“it is inevitable that energy costs are going to rise partly because we are running out of natural resources of gas in the UK”* (R1), with them highlighting that *“if current arrangements are just left as they are then costs will escalate and the security of supply will be threatened”*.

In short, from the above, electricity price rises during the post-2003 period, including from 2003 to 2010, to some extent have related to ongoing fuel price rises, this being seen as a result of limited supply relative to increasing demand, and the effect could be on final electricity prices for consumers as well as on the security of electricity supply in the UK.

Figure 4.3(d): The effect of a combination of various factors on electricity prices and consumer benefits during the post-2003 period, including from 2003 to 2010



According to Figure 4.3(d) and to the above factors revealed and analysed, it can be seen that electricity price rises in the UK from 2003 to 2010 took place as a result of a combination of both internal and external factors. These included various issues forming within and outside the electricity system, which occurred as a result of changes in structure, regulatory policy and regulations, and externalities. These factors significantly concreted the weaknesses and threats, resulting in the market not functioning and consumer interests not being met. In particular, the issue of the provision of information (relating to asymmetric information) has been a critical one since the price cap was removed in 2002. In fact, it has been the most critical weakness of the system, escalating other disadvantages and exacerbating other weaknesses, including the problems of switching supplier relative to the degree of competition, and of the provision of the social tariff scheme. Additionally, an important reflection is that Ofgem has failed to make use of the most important component of the internal market system, which is price/tariff information, in strengthening the market.

Conclusions

In summary, restructuring the electricity sectors with changes in the regulatory regime has already affected prices, while externalities, including fuel price rises and EU requirements, become significant threats that increase the degree of problems within the retail electricity market. These all account for a much higher proportion of electricity price rises and for disadvantages for consumers, particularly the issue of information. Therefore, use of regulation for a sustainable solution is required.

Chapter 5: An Analysis of the Improvement of the Regulatory Regime Relative to Information

After the introduction of full competition in 1998, a competitive energy market and market participation by consumers have become a constructive solution for creating consumer benefits and protection. However, until recently, important factors within the energy system and other externalities have significantly changed, in particular, provision of pricing information, leading to a reduction in competition within the system and affecting the interests of consumers. This shifting is critical and the market alone in this regard can neither drive a desirable outcome nor ensure a social goal. It needs an appropriate response from the regulator to pursue a practice of creating sustainability, security and affordability, otherwise leading to UK householders' vulnerability along with energy poverty.

Previous chapter shows that price/tariff information, as an internal factor, has gained in importance and has been the most critical factor adversely affecting the degree of competition as well as consumer benefits since liberalisation began. In relation to the previous findings, this chapter presents: 1) sources of the information issue; and 2) an empirical analysis of improvement in the regulatory regime of the UK retail electricity market, this focusing on a possible improvement in the regulatory information used in the relationship

between electricity suppliers, consumers, and the regulator. The goal is to generate a possibly sustainable solution in response to recent problems taking place in the electricity market.

All interview findings presented in this chapter represent the whole analysis of improvement in the regulatory regime. This analysis will contribute to a new practice for improvement in the regulation and its enforcement in the light of consumer interests. This includes an increase in consumer benefits and protection, particularly for vulnerable groups. The analytical framework discussed in Chapter 2 is used for this analysis.

This chapter is outlined as follows. According to the issue of information revealed earlier, the chapter begins with a review of empirical evidence collected from electricity suppliers and stakeholders with regard to provision of electricity price/tariff information for consumers from 2003 to 2010: Section 5.1. This examines and explores a scenario whereby suppliers and others, such as energy comparison sites, CF, and Ofgem, managed to use price/tariff information for interacting with consumers and for stimulating them to engage with the retail market during the critical period. Section 5.2 investigates and analyses the empirical data collected through the fieldwork for answering the research question relating to how an improvement in the regulatory regime could be established in response to the issue, in order to ensure better consumer benefits. Discussion and conclusion are also included to summarise the research in the final part.

5.1 An investigation into the provision of information in the retail electricity market

The following demonstrates an investigation into the provision of price/tariff information to consumers (sources of information issue), this being a requisite for market participation. It is important to now look at how this information was provided in the relationship between suppliers as sellers, consumers as purchasers, and the current regulatory body in the system. The investigation focused on the post-2003 period, including between 2003 and 2010. The details presented below attempts to address the sources of information issue.

5.1.1 Provision of information by energy suppliers

Suppliers as sellers in the retail electricity market have been playing a key role in providing price/tariff information for consumers since liberalisation began. Various suppliers have taken part in the fieldwork of the study, including some of the Big Six energy companies and other small energy suppliers.

5.1.1.1 Strategies in providing information

The study attempts to: identify what strategies electricity suppliers used for delivering information to UK consumers; and uncover how the information issue originally started within the relationship, with the result minimising the degree of competition and putting consumers at risk, particularly the vulnerable groups.

All participants highlighted one important aspect with regard to the provision of information, this always being processed and developed in connection with a licence condition: a set of regulations granted and used by Ofgem to control companies' behaviour, at all times, and they cannot refuse to comply with these regulations (see also Chapter 2). For example, according to Ofgem's requirement, the companies have to provide a statement about their customers' tariffs. This reflects that there are certain rules on regulatory information that the companies have to act upon.

- **Big Six Companies**

Participants from the Big Six suppliers were questioned about the strategies they used in the provision of electricity price/tariff information for consumers. These companies independently linked provision information strategy to various factors in order to interact with energy users. Nonetheless, all defined their major means of providing price/tariff information to consumers relatively similarly, which included companies' websites, Internet comparison sites, telephone service, doorstep selling, and information packs.

The Npower representative explained to the author with respect to the company's strategies that *"we give all of our customers all of the information that they need even if we did not want to do it, we would have to do it"* (SS2). He, however, stressed that there was a real challenge in providing information to consumers. This was because the company wanted to give consumers the widest possible choices but, because every single consumer is different and the company needed to ensure that they did not confuse them, either they did

not need or it was hard to understand, particularly vulnerable groups. In relation to this, he added that *“our strategy is called ‘a crystal clear mark’ which is a balance between choice and not too much choice”*.

In terms of electricity tariffs the company made available, the same participant went on to say that *“the number of tariff changes all the time and the key payment types all have slightly different tariffs and they have different combination”* (SS2). He also indicated that the company always believes that there is no one best way for best interacting with all consumers through pricing information, pointing out that *“different consumers want different things like some customers want to have the absolute cheapest price and some customers are more interested in different aspects of what the company provides to them”*. The reflection here is that the company was aware of consumers’ difficulties regarding use of information and market participation, despite the fact that the company tried to make information valuable with more choice and simplification. A solution providing a balance between choice with the best possible information and simplicity, to date, has not yet been addressed. This is important as it can be seen from their practice that tariffs can be varied at all times depending on changing circumstances, this continually creating confusion for consumers.

While the Scottish Power representatives shared their experiences regarding the information provision strategy, stating that *“what we try to do is to keep our tariff structure relatively simple”* (SS11), and arguing that they had very comprehensive information on their website, and defining the factor that the

company focused on in drawing the attention of consumers, which, both agreed, was related to pricing and timing. They explained that consumers' own personal situations, their personal motivation, and market circumstance all affected the company's plan on price, arguing that *"these affect how the company comes out with lots of products"*, and adding that *"what varies a lot more would be the special offers that we could put as many as half a dozen to a dozen special offers up maybe on a monthly basis"*.

Clearly, information provision to consumers is similar for both Npower and Scottish Power. These two companies focused on providing a balance between choices and simple information and were concerned about what consumers really needed. Their strategies are always ready to be changed in line with changing circumstances. In fact, their strategies refer to a scenario where a range of tariffs can be generated and changed constantly. Perhaps this is not surprising due to the fact that consumers were faced with more than 5,000 thousand tariffs from 2003 to 2010.

Other members of the Big Six were more focused on dissimilar strategy. The EDF Energy representative revealed that the company used Internet links as a main strategy for provision of electricity price/tariff information so that consumers could make regular comparison and assessment. Additionally, he highlighted that the company always believes in brand and strong offers known as 'non-price offering', this being a major factor used to inspire consumers, stating that *"if you have your supply of EDF energy you earn Nectar points"* (SS4). The quote reflects what we understand about electricity

goods, a product that consumers do not see differences between several suppliers in the marketplace. EDF, therefore, created a premium product or a free gift to inspire consumers to use the product provided by them. This practice also generated brand loyalty, but this does not always result in good outcomes for either the market or consumers. In fact, such consumers did not use price information for their market participation, but were more concerned about the 'prize' on offer. The significance was that suppliers provided a number of tariffs with a range of options, resulting in confusion for consumers.

Another company who focused on a significant non-price service, Scottish and Southern Energy (SSE), was also invited as a participant energy company. The SSE representative highlighted that, in their information policy, it was important providing consumers with details about extra benefits so that they could gain from being their customers, stating that *"we have got affinity deals with Argos and My Savers and we also have a relationship with Mark & Spencer"* (SS7). In other words, consumers received a range of free optional add-ons, earning points or having the option to select premium and other services. Nonetheless, in terms of the factor which the company referred as important in interacting with consumers was the transparent benefit, which she stated that *"it is all about ensuring that information is clear and easy for the customer to understand"*.

The notion of information provision strategy relating to a non-price competition was a very important theme throughout the interviews with the participants from EDF Energy and SSE. The strategies applied by them define how

several companies made price/tariff information available in the UK from 2003 to 2010, consumers being offered electricity with various choices of prizes. The companies continued to generate a number of different tariffs to inspire consumers, because they believed that their strategy was about developing a product with various choices in response to a competitive market, but this, in fact, could also give consumers a confusing message, and could increase information asymmetry between suppliers and householders, possibly leading to disadvantageous results.

Figure 5.1(a): Information provision strategy by the Big Six energy companies

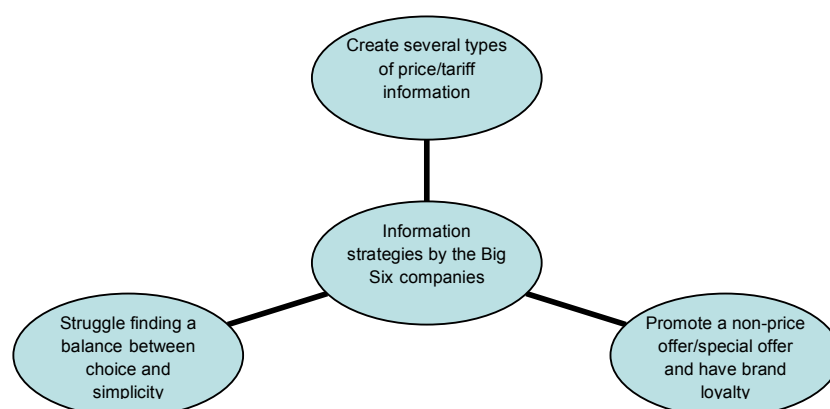


Figure 5.1(a) demonstrates a critical scenario in the UK retail electricity market whereby information strategies used by big companies in the relationship were neither constructive for consumers nor for the market. A great number of price/tariff structures, along with a range of non-price offers continued to be generated, while the suppliers themselves could not arrive at a balance between choice and simplicity.

Other small suppliers

On the other hand, other small suppliers had different strategies in providing information to consumers. Interviewees from these companies were asked the same question regarding their information provision strategy. The strategies used by this group were relatively similar by focusing on making all information uncomplicated for consumers to understand.

The following seven representative companies, which include: 1) LoCo2 Energy Ltd; 2) Green Energy (UK) plc; 3) Ovo Energy; 4) Ecotricity; 5) Good Energy; 6) Utilita Energy Limited; and 7) EBI Co Ltd, did offer tariffs with options for consumers to choose either between 100% renewable energy and low-carbon energy, or between standard tariff and Economy 7. Most thought it was important to ensure price/tariff information with transparency and simplicity. Also, payment techniques used did not differentiate between electricity tariffs.

The LoCO2 Energy Ltd representative explained the strategy used by the company in delivering information to consumers, stating that *“the website, the magazines and the different price comparison sites are the main way that we provide the information”* (SS8), and highlighting that the most important factor in their approach was *“making it accessible and transparent so that the consumers can compare (compare the saving)”*. She also provided an example by saying that *“we only have three main tariffs: 1) the top price for 100% renewable energy; 2) the middle price for 100% of renewable energy but it is sourced from a wider range of technology; and 3) the economic price*

for 20% renewable energy combined with 80% low carbon energy". This shows how the company applies their strategy to interact with people.

Other small suppliers participating in this research had the same strategy for information provision: Green Energy (UK) plc, Ovo Energy and Ecotricity, however, delivered only two uncomplicated electricity tariffs to consumers, including 100% renewable and low-carbon energy tariffs.

The Green Energy (UK) plc representative mentioned that *"we publish the domestic tariff (for households) on our website and we are included on most comparison websites"* (SS5), adding that *"we are very open about our pricing policy and we communicate with our consumers regularly by email, and in the form of our bi-annual newsletter"*. The Ovo Energy representative clarified in short that *"the strategy to promote our energy is through traditional marketing channel"* (SS6), by which she meant the media and public relations. Also, the Ecotricity representative explained that the company provided price/tariff information through their website, stating that *"our website contains information about us as a company, our tariffs and our ethical approach"* (SS9), as well as having a price match to other standard tariffs (brown energy) offered by different suppliers, such as the Big Six. All these companies highlighted providing information on their websites as a major strategy. Their prices were also clear and easy to understand and it was not an issue for their customers.

In terms of the factor which the companies regarded as very important for consumer inspiration; Green Energy (UK) plc and Ecotricity confirmed that the significant factor was their clean energy. This was unlike Ovo Energy, which regarded the most important factor in information provision as “*price competitive*” (SS6), and stressed that “*consumer comprehension of competitive price/tariff information is a key priority for the company*”. With these small companies already creating simple and transparent information, consumers could see a comprehensive tariff with an option being offered and could easily make decisions in their own interests.

Another group, consisting of three small comparable companies, including: Good Energy, EBICo Ltd and Utilita Energy Limited, was also invited to take part in the interview. They also used a strategy of simple and clear information and offered just two simple tariffs: standard and Economy 7. However, only Good Energy provided 100% renewable energy, while EBICo Ltd provided brown energy with neither a renewable nor a social tariff. Utilita Energy Limited merely offered energy for prepayment consumers.

The Good Energy representative explained to the author regarding the strategy that “*the company has only two tariffs and both are available in an information pack sent to all enquiries and on the website*” (SS12), and highlighted that “*evidence of 100% renewable energy via supplier fuel mix information is the key information*” used by the company to inspire consumers. EBICo Ltd also used a similar strategy to promote information through website and an information pack; however, unlike Utilita Energy Limited. The EBICo

Ltd representative told the author that the company also had a number of partners, mostly social landlords or providers of social housing, with the company marketing directly to their tenants. Therefore, some people and vulnerable groups were made aware of their electricity service, whereby these understood that their landlords, whether it was a Council or the Housing Association, recommended buying electricity from the company. Moreover, he suggested that a telephone service to these people was also available.

The latter generally used face-to-face sales activity and recommendation as major methods of gaining new customers. The Utilita Energy Limited representative regarded their customers as *“people who can generally be categorised by being hard to reach with most marketing techniques (vulnerable groups)”* (SS1), and added that *“they do not engage so much with the internet and they do not use landlines and they are difficult to mail shot”*. However, he stressed that *“as part of the sales process the customer is given a quote and some price comparison carried out”*. These showed the method the companies used in dealing with vulnerable people who were not able to access information through the Internet. It reflects the importance of face-to-face communication strategy used by the companies in delivering information to these people.

With regard to the factor they used for inspiring consumers, EBICo Ltd and Utilita Energy Limited focused on competitive pricing. However, not surprisingly, Good Energy valued their green resources and energy as a ‘real deal’ by stating that *“we are not competing on price”* (SS12).

Table 5.1(b): Electricity tariffs provided by small energy companies

Small energy companies							
Tariffs offered	LoCo2	Green Energy (UK) plc	Ovo Energy	Ecotricity	Good Energy	Utilita Energy Limited	EBI Co Ltd
A: 100% renewable energy or low carbon energy	A	A	A	A			
B: Standard/domestic tariff or Economy 7(day/night)					B	B	B

Table 5.1(b) lists the tariffs that were identified and provided by the small energy companies, in that they either offered two tariffs of 100% renewable and low-carbon energy (A), or they offered two tariffs of standard/domestic tariff and Economy 7 (B).

Figure 5.1(c): Information provision strategy by small energy companies

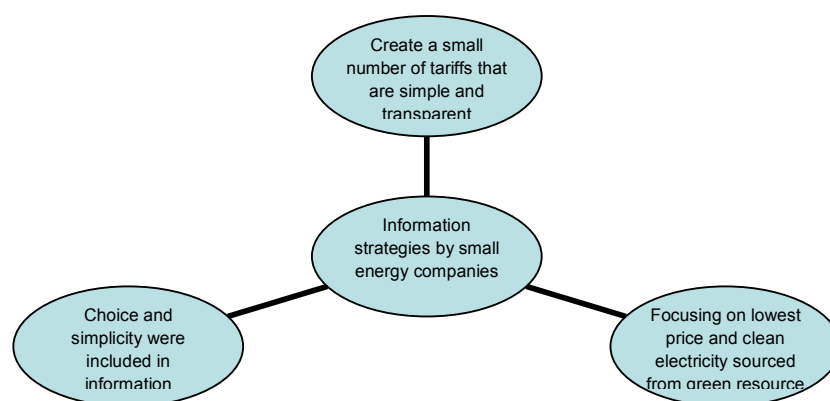


Figure 5.1(c) above shows a key theme applied in their strategy of information provision by small energy companies.

All the above discussions reflect that, for small companies that were not delivering 100% renewable electricity maintained competitive price information (the lowest price) as their best factors for gaining new customers. In relation to this, just two tariffs were offered (see Table 5.1 (b)); in consequence, price/tariff confusion was not reported, whereas the Big Six had significant issues with providing a great number of tariffs that confused consumers. Despite the fact this was part of companies' product development strategy, the overwhelming choice provided no real choice; rather, it adversely increased asymmetric information between sellers and buyers and affected competition unit.

Additionally, as a result of the provision of various non-price offers, aimed at increasing consumer satisfaction, a competitively low price (a real value of electricity goods) was not sufficiently focused on. In theory, interaction between buyers and sellers is driven by price and satisfaction relative to self-interest (see Chapter 2). However, in the real world of the retail electricity market, suppliers regularly used the strategy of non-price competition to overlay and distort the value of competitive price information and, as a result, consumers do not have adequate quality information about the electricity product, which is all about price. Clearly, it reflects weaknesses in the relationship between consumers and suppliers as well as in the interaction between consumers and the market. Additionally, the greater the information inefficiency between suppliers and householders the greater scope for misleading information and scams across the system.

5.1.1.2 The cheapest tariff and the social tariff

Suppliers were asked how they normally promoted their cheapest tariffs to consumers and how frequently this information was updated. They were also asked whether or not their social tariff was the cheapest tariff and what the criteria for qualifying for the benefits were. With regard to promoting the available cheapest tariff, most companies normally promoted the cheapest tariff through the Internet both via their own websites and on comparison sites. However, each company had more than one cheapest tariff available because a cheapest tariff with certain combinations was not necessarily cheaper than others that were combined with different options and prizes. All revised their available tariffs annually.

Opinions expressed regarding the social tariff varied. The similarity in social tariff provision among suppliers was that the social tariff was the cheapest tariff or was equal to the cheapest deal offered in certain areas, as well as being the same tariff available across all payment methods. With regard to the criteria relating to who would be eligible to obtain benefits, all believed that it needed to be created by the companies. For these reasons, the criteria are relatively different among suppliers. For example, Scottish Power offered their social tariff as the cheapest tariff emphasising that *“we guarantee the customer the cheapest price in that region regardless of payment method”* (SS11). They meant, in other words, that it was not only the cheapest tariff the company had but it was the cheapest tariff the company provided in that area. However, they argued that there were a great number of the cheapest tariffs because of *“the nature of the charging structure of the distribution charge in*

different regions”, this argument being similar to other companies’ such as SSE’s. However, this quote reflects a critical information management towards cheapest tariff provision, showing that there were various cheapest tariffs available within one energy company. This implies how the Big Six possibly hide and manipulate the cost of the transmission network charge, because, in fact, these companies mostly own both transmission and distribution lines as a result of vertical and horizontal integration (see also Chapter 4). In relation to this, the participants, from Scottish Power, explained about the criteria for qualifying for the social tariff, stating that “*we are working with the Department of Work and Pension*”, this Department helping the company to identify who was eligible for benefits. However, the participants also clarified that “*our view is that the money needs to be well targeted and go to people who need it the most and that is a big feature of how we seek to work through our social tariff; it is not just about being as simple as trying to meet a government obligation and give the money away in the easiest possible manner*”. This implies that budget on social tariff was their significant issue and this could possibly have an impact on non-vulnerable consumers.

Similarly, the EDF Energy representative explained that their cheapest deal was promoted online. He confirmed that people who were on the social tariff provided by EDF Energy would be no worse off. However, he highlighted the issues of social tariff provision and of its criteria, saying that “*it is about whether or not we can identify the fuel poor; the definition of real poverty is when people spend more than 10% of their income on fuel; on the biggest problem we have now is that we do not know what people’s incomes are*”

(SS4). Nonetheless, he said that *“if you (consumers) say you are on benefits; it is possible for someone to prove they are on benefits; they will have a benefit book and we would be able to find out that way”*. With regard to the target set for those considered vulnerable, he confirmed that there was no target since this related to a requirement from the government. Data gathered from EDF Energy implies a scenario where information regarding the benefits for vulnerable groups was unclear. Not only did these people not know what benefits they were entitled to and where to ask for, but the companies themselves were confused and could not identify what benefits each particular consumer might receive.

From the above, it can be seen that there were two main types of cheapest tariff being provided by energy suppliers across the UK: 1) the cheapest tariff for non-vulnerable consumers; and 2) the cheapest tariff for vulnerable groups known as ‘the social tariff’. Each was different in different areas and, particularly, the former also varied depending on different combinations. This clearly shows the real world of the UK retail electricity market, where significant confusion faced by consumers had arisen from the way in which energy companies promote the cheapest tariffs in the market. Additionally, the differing ways in which the companies have interpreted social tariff has also exacerbated the information issue among vulnerable people. Clearly, this affects the intensity of competition and consumer confidence and trust.

5.1.1.3 Information on electricity bills

Energy suppliers were asked to describe how information was provided on consumer bills. Most tended to provide householders with all of the necessary information as possible in order to meet licence conditions. However, they believed that this could be too much for consumers. The following discussion provides an example of how energy suppliers communicate with consumers through billing information.

Participants from the Big Six all viewed information on bills relatively similarly, and they provided as much necessary information as possible. For, example, the Npower representative stated that *“what we try to do is put as much simple information on the front page of the bills as we can, and have as little small print as well can, and as much ability for the consumer to calculate their bill from the information that we have given them”* (SS2). Similarly, the SSE representative stated that *“we provide a whole load of information on every bill or statement that the customer gets, not just once a year, such as the customer’s tariff, product information, the pence per kWh”* (SS7), adding that *“the bill is very clearly explained and we have designed our bill to make sure that is clear for customers to understand in response to customer feedback”*.

The above all imply that consumers tended to receive a lot of information on their bills. Electricity goods/service is an exceptional product in that it differs from others, whereby consumers need to know and understand various details for their market participation, such as the tariff’s name, a statement of consumption, and fuel mix information relative to environment protection.

These are to help consumers to be able to decide whether they should continue with their current supplier or to switch to another offering them a better deal. Nonetheless, it implies that, in the same time, it is difficult to address and identify the right information at the right level for consumers.

5.1.1.4 Information assessment and complaints

All suppliers usually assessed price/tariff information provided to consumers to ensure that it was comprehensive and supported them in making informed choices. Participants were therefore asked to give their perspectives on the information assessment process, the relation to consumers' complaints, and to the relationship between suppliers and consumers. Most admitted that they received some complaints regarding the issue of information whereby consumers found it complicated. However, some of them argued that their information was not difficult to understand, and suggested educating consumers to help understand pricing information.

For example, the Scottish Power representatives approached information assessment by conducting 'voice of customer research' every quarter, in order to try to understand and evaluate what consumers were thinking and saying about them, including the provision of information, such as billing. The participants also admitted that the company received complaints but these were not related to unclear information and the company also did not find their information too complicated to understand. Both shared experiences regarding the background of the complaints, stating that *"in general, the perception is that the media and consumer groups present that the pricing*

and tariff information is not easy to understand, which this is a general belief” (SS11), and further explaining that “there has also been a lot of volatility in the prices when people would expect that their energy bills was to be fixed and not changed much and people do not understand that well why an energy bill moves and why it is so volatile; for example, the cost of energy efficiency and government obligation all of which make up a big part of people’s bills”. This statement, however, implies that consumers did not trust the company and thought that price increases were introduced just to increase the company’s profits. It is clear that the confidence and trust issue is critically affecting the relationship between suppliers and consumers.

Equally, the EDF Energy representative told the author that the company took other related factors into account when assessing information, saying that *“if you value Nectar points then you will see the tariff and assess the tariff in a different way because you (consumers) are not just buying energy; you (consumers) are getting Nectar points at the same time” (SS4)*. With regard to complaints relating to complicated information, he also argued that information was not too complicated to understand and stated that *“I think it (energy price/tariff information) is no more different than car insurance or banking and I do not think energy is more or less complicated than retail banking”*, with him further arguing by questioning that *“is that a failure of consumer policy or is that because they (energy) are just complicated things and people should be more educated and able to understand things?”*. In addition, he believed that consumers might switch to cheaper deals or more expensive deals because there was a high degree of switching and the

market had to be working in some way or other. Again, the above review by EDF Energy reflects the issue of pricing inefficiency commonly related to an introduction of a high range of tariffs with non-price offers. As a result, it is possible that the company set all high prices for consumers.

Nonetheless, the above details all highlight that big energy companies mostly received complaints regarding information confusion. This shows that their various energy tariffs have become a critical issue for consumers and the system.

Small energy companies also regularly performed information assessment to ensure that their information is clear and transparent. It is not surprising that most small companies did not have complaints relative to unclear information as they kept the number of tariffs low. Instead, the companies were confident that customers were able to understand their tariffs and how their energy was priced. Likewise, one participant from these companies declared that *“keep thing simple helps to limit confusion”* (SS5). Accordingly, these small companies all had good communication with customers through clear information provision, which has helped to strengthen the relationship between suppliers and consumers and the competition unit. This clearly reflects a key principle required in a well-functioning market system, which, in theory, is a beneficial interaction between sellers and buyers (see Chapter 2).

5.1.1.5 Licence conditions on regulatory information

According to the licence conditions suppliers are required to provide information to consumers and Ofgem. Therefore, suppliers were asked to express if they found working under these conditions difficult.

Most of the Big Six suppliers thought that working under this condition, to some extent, was not easy. For example, the Scottish Power representatives explained that, since liberalisation began, there has been a code of practice document that various regulators made the energy companies comply with, in that *“it was probably about 20 pages”* (SS11). As a result, the participants commented that *“the most difficult thing for us is taking all those obligations but making sure that we present it back to customers in a communication style that is straightforward and concise, and people understand”*. Additionally, information cost was also an issue for them.

Similarly, the SSE representative highlighted two issues occurring as a result of working under the licence conditions: 1) providing some information to Ofgem on a regular basis was not always easy, with her stating that *“as the system (the energy market) is a live/open system, the data is constantly changing, this information may be accurate on the day but not necessarily what might be the same tomorrow or another day”* (SS7); 2) providing a financial statement every year, with the representative arguing that *“some information that we have been asked for, it might be that we have to run a special report to get”*.

On the other hand, small suppliers did not find this licence condition an issue, although only a few of them referred working under these licences to the cost issue. Instead, they felt that the obligation provided them with a structure to what they were trying to achieve. For example, one stated that *“we have not found any difficulties (from working under the licence condition)”* (SS8), and added that *“I think the guidelines are there to protect us from any difficulties”*, while another commented that *“the information requirements we have to give at the moment are relatively simple to provide”* (SS10). These comments reflect that information provided by these small companies was already transparent and simple, which was consistent with the licence condition.

Discussion

The above discussions all suggest that the issue of information mostly came from suppliers' sites. This is not to say that they did not try to make information clear or transparent. In fact, most of them tried to do this very thoroughly. However, 'a process of product development and refinement', established by suppliers, with the aim to differentiate products from competitors, was a major source relating to the information issue in the retail electricity market. These have resulted in a large number of tariffs existing in the marketplace (approximately 5,000 tariffs with different non-price offers). Moreover, this issue is also combined with other factors, including: 1) different transmission network charges in different regions and; 2) different payment methods, clearly kept a number of tariffs extremely high and exacerbated the issue of consumer confusion and trust. This was also an issue for a provision of cheapest tariff.

According to the above discussion regarding the amount of tariffs, the resulting consequences can be listed as follows.

First, consumers did not use the lowest price in their market participation but the 'prize'. As mentioned, for electricity goods, the product is not different between suppliers but the price. Thus, in the competition unit, the cheapest price should be primarily promoted by the company and should be used by consumers. Second, some consumers, who preferred to use price for their informed choices, found information too confusing as a result of the high number of cheapest tariffs in the system. Ultimately they did not have adequate quality information; therefore, possibly avoided participating with the market. Third, the amount of cheapest tariffs available in the market negatively affected consumer confidence and trust. Consumers who have not yet switched will not do so, and those who have already switched will not switch again as a result of them having ended up with worse deal. This relates to the complex issue in that the cheapest tariff with a certain combination available in the market was not necessarily the cheapest deal either offered by the company or available in the country.

Fourth, sellers will not focus on price as their major strategy in the market. The energy company will not focus on using the lowest price to inspire customers, but on maintaining promoting special deals that combine expensive prices with non-price offers, such as a tariff with Nectar points. This reflects the argument, by Stiglitz, with regard to the fact that when the market is plagued by information issues, there are motivations for sellers to make use

of and to increase imperfect information for their profits (see Chapter 2). Also, buyers will engage with the market less because there is no cheaper service to buy, resulting in a reduction in competition. Finally, some interest groups will take this opportunity, where information is complex, to maintain manipulating prices and misleading them through a promotion of non-price offer and a deceptive guarantee regarding the prize.

The above was never an issue for the small energy suppliers because, by keeping their number of tariffs low, it prevented confusion. Accordingly, asymmetric information between suppliers and householders was less significant. This implies that appropriate licence conditions determining the appropriate range of tariffs in the market and reducing the degree of asymmetric information and its adverse consequences is required for a competition unit. Additionally, information regarding the social tariff was seen as an issue for both suppliers and consumers. The reason behind this was not related to suppliers' administrations but to social policy and Ofgem's administration, leading to fuel poverty remaining unresolved.

5.1.2 Provision of information by Ofgem, consumer bodies and other related organisations

For the retail energy market system, Ofgem has worked with a range of organisations in order to support consumers by providing the necessary information for their market participation. Representatives from Ofgem, Consumer Focus (CF), Consumer Direct (CD), the Citizens Advice Bureau (CAB), and the Energy Saving Trust (EST) were invited to share their working

experiences for the investigation of this study. It is important to now examine how this information all has benefited and supported consumers in their engagement with the energy market.

The Ofgem representative was asked to explain Ofgem's view regarding information provided by suppliers for consumers, relative to the aspects of appropriateness, adequacy, and accuracy. In relation to this, the participant was also asked to comment on how this information had an impact on consumer confidence and trust issue. Additionally, the difficulties faced by suppliers arising from working under some licence conditions with regard to provision of information were discussed. The Ofgem representative highlighted that, after conducting an 'energy probe' in 2008, with regard to the retail electricity market, they did have significant concerns about these issues, stating that *"we found that there is a scope to improve information; and we are making a requirement that on the customer bills, it has to have more transparent information around what the benefits of switching are, in particular what the cheapest tariff is, and how much consumers can save by going on that tariff"* (R2). This shows that Ofgem has considered billing information as the major remedy for all information issues. However, it seems that the solution has not been addressed.

The same participant said that Ofgem was aware of suppliers' difficulties, stating that *"there are some costs to them (suppliers) from that, but it is one of the things we have sort of done (ask them to provide clear information to consumers) and we feel it is the right thing to do"* (R2). In addition, he told the

author with regard to information requirement on suppliers' financial accounts that *"it involves getting data around how much the companies actually pay for gas and electricity (wholesale cost)"*, which he argued would help to open up transparency and fairness that could have an impact on price/tariff information for final consumers. This implies that Ofgem was active when dealing with regulatory information against poor and unfair price/tariff information used in the system. However, again, it seems that issue of transparent information regarding the link between wholesale and retail prices has not yet been addressed.

Other participants, from CF, CD, CAB and EST, were also asked about the role of the organisation in supporting consumers to engage with the market through information and how this is being evaluated and is influencing the interaction between consumers and the market. Additionally, complaints and difficulties relative to misleading and poor information were asked to be identified.

One, from CF, highlighted the role of the organisation in supporting interaction between consumers and the market, stating that *"we provide price comparison fact sheets and performance information for customer service company performance; we also run an accreditation scheme, it is a code of practice for online price comparisons, it is called the 'Confidence Code' (to govern the behaviour of the price comparison website and how they display their tariffs); that is to encourage consumers to do price comparisons, safe in the knowledge that the information is accurate, comprehensive and unbiased"*

(C2). Another, from CF, further clarified that *“we provide information leaflets on how to switch supplier; we have a lot of independent pricing information for consumers, which consumers can sign up to receive it by email, and people can ask us to send them if they do not have access to the internet; and information was edited every year”* (C4). She also stated that *“we do a lot of lobbying of things go wrong and we work a lot with bodies like Ofgem to ensure that consumers get the best independent information”*. Additionally, with regard to billing information, she stated that *“is something Consumer Focus has been very supportive of”*. In terms of complaints, the former said that *“they mostly related to billing”* (C2); other issues such as switching and mis-selling had been found to be a critical issue for vulnerable groups.

The above clearly highlights the important role of CF in supporting better interaction between buyers and the market. Billing information was a major focus and was promoted by the regulator and consumer bodies to support consumers so that they received the right information.

One, from CD, revealed that *“the role of CD is to provide clear and practical advice (information) for consumers”*, with her explaining that *“CD provides pre-shopping advice to consumers upon request”* (C5), which includes directing consumers to the CF website and making consumers aware of the things they should consider before choosing an energy company: 1) whether or not there is a standing charge; 2) does the tariff suit their needs; 3) do they understand the terms and conditions of the tariff; 4) any minimum term for a

particular tariff; 5) the payment method required; and 6) and the unit price of the tariff.

In addition, another CD representative highlighted another work CD was responsible for, which was *“offering advice (information) to consumers who have got issues (complaints) with their energy suppliers”* (C7), with him clarifying that *“we give them advice around their consumer rights, their rights that arise from industry standards, and we give information about how to resolve the problem themselves and the next step available to them; if their first attempt at resolving is not successful, we have referral routes open to the energy companies for escalating complaints and also signposting information to the Energy Ombudsman”*. In terms of information evaluation, one said that *“it was made through a satisfaction survey”* (C5). With regard to the sources of complaints, both detailed that most related to: 1) pricing information; 2) clarity of bill; 3) problems arising from contract; 4) connection and alternation of supply; and 5) meter provision or exchange.

In terms of information provision of social tariff relating to energy efficiency, the participant clarified that *“we would tell them that there are social tariffs relative to energy efficiency available from your energy suppliers; consumers have to speak to them about whether they qualify for them or not”* (C7), and added that *“we may also suggest people contact Energy Saving Trust, which may be able to give them additional information”*.

The above suggests that CD supported consumers with information, by making them aware that there might be choices for them and then by pointing them in the right direction about the best people to approach in order to support them in making an informed choice. This also helps to strengthen the interaction between consumers and the marketplace.

Similarly, the CAB representative identified their work, whereby most customers were from the vulnerable groups, by stating that *“when someone comes to the Bureau that there is a problem, for example with affording to pay for essential items like electricity, what the advisor do is look at their income and expenditure and see how much they are spending on each, the advisor would see if they are getting all the benefits that they might be entitled to; also advisor might look at the amount the person is spending on electricity and suggest that they might want to think about switching”* (G4), and this was to help them reduce energy bills. However, he highlighted that most consumers did not know either their tariffs or their consumption, this leading to a difficulty in CAB's routine work.

Another effort made by the CAB in supporting consumers was with regard to arranging a special programme (a campaign) named ‘Energy Best Deal’, this aiming at delivering information and signposting people to obtain a better energy deal through switching supplier, with the same participant stated that *“it is just trying to get people to understand how they can save money by switching, by looking at how they pay, checking they are on the best tariff, and thinking about energy efficiency”* (G4). Another participant working for this

programme told the author that *“the programme provides advantage for householders because it is providing (face-to-face) information”* (G3), with her arguing that *“there is a lot of ignorance out there, people do not know that they can switch their provider, they do not know if they are allowed to, how it happen, if it will be expensive, if they need to change their electricity meter”*, and she noted that, by conducting the programme (in sessions), *“I found them very useful, because people do say they are going to make a change”*. Additionally, both agreed that billing information containing a summary of energy usage and its cost was important and key information for all consumers for their market participation.

The above reflection relates to the important role of CAB in delivering essential face-to-face information to consumers, particularly for vulnerable groups. This organisation clearly helps to create better communication and better interaction between consumers and the market.

Another organisation taking part in the study was the Energy Saving Trust (EST), which is responsible for providing energy efficiency information to consumers. Most services were available for those considered vulnerable, and this reflects how consumer bills and fuel poverty can be reduced in this era of liberalisation. The EST representative highlighted that all necessary information for consumers was available in the website, highlighting: 1) energy efficiency; and 2) renewable energy, as well as providing information via an advice line, allowing people to discuss all options available. The main information they provide is maintained on their ‘Grant Information Database’,

which was developed and updated by energy suppliers. With regard to provision of information, he explained that *“we would ask a series of question to find out what type of property the person lived in, what type of energy efficiency they already have and try to identify what it is most useful for that person; then we use our database to find out whether there are any offers which matches that need and then we will provide them with information or put them in touch directly (with the suppliers)”*. He explained that, according to CERT, suppliers have to make savings in the amount of CO₂ emitted by householders, with energy suppliers meeting the target by promoting energy efficiency to householders. It can be seen, for example, with a certain energy tariff offered by SSE, cash credit will be given to customers who manage to achieve a 10% reduction in energy usage plus another cash credit will bill given for arranging loft insulation or cavity wall insulation.

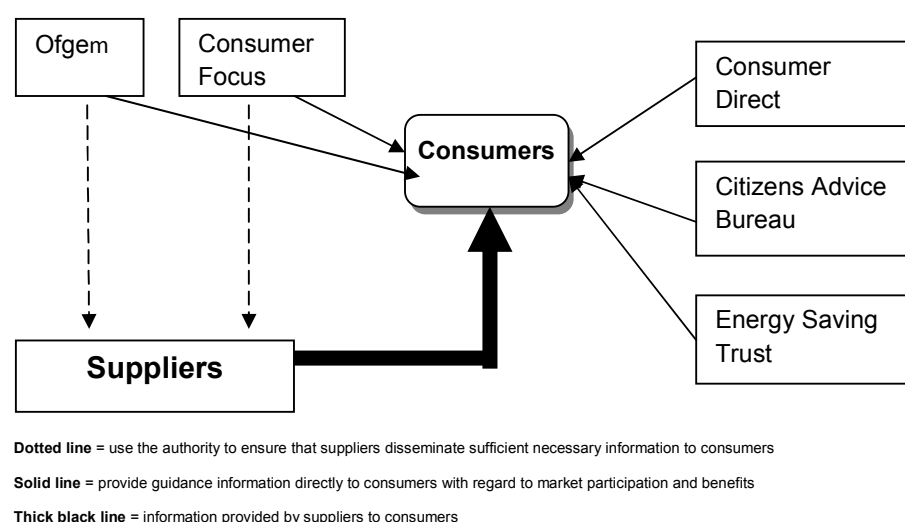
Discussion

From the above discussions, it can be seen that Ofgem and CF played a significant part in supporting consumers with information in order for them to benefit from the market system. This information was developed in two ways: 1) providing guidance information directly for consumers regarding how to participate with the market through websites and other channels, such as factsheets and leaflets; and 2) generating regulation and related codes of practice to enforce suppliers to produce adequate, fair and good information for consumers. Other related organisations such as CD, CAB and EST also played a significant role in giving impartial advice directly to consumers, making them aware of the choices available, in order for them to take

advantage of the energy system. This, mostly, was made available through advice lines and face-to-face advice.

Figure 5.1(d) below shows the scenario of information provision in the retail energy market, where several organisations were related and were acting to support consumers with the necessary information. It also reflects that Ofgem has the direct authority to take action to tackle the problem.

Figure 5.1(d): Information provision by Ofgem, Consumer body, and others



5.1.3 Provision of information by energy comparison sites

Energy comparison sites connect to consumers through the Internet, offering them price/tariff comparison information. The companies' roles are to: 1) help consumers interact with the market; and 2) help them switch easily to a better deal. These companies work in cooperation with suppliers, by receiving commission from the suppliers if consumers decide to switch suppliers

through them. However, they are required to comply with the Confidence Code generated by CF.

Seven energy comparison companies took part in this study, sharing their experiences in delivering information to consumers. They include: Which?, uSwitch.com, energyhelpline.com (firsthelpline.com), UK Power Limited, iammoving.com, SimplySwitch, and The Energy Shop. All were asked to identify the extent to which information was used by consumers in the retail electricity system, and how the companies provide information to consumers in order for them to be able to participate with the market and to switch to a better deal. In addition, they were asked to provide details of the information consumers want to know and how it should be supplied to them.

Most participants highlighted that most UK householders already used information to participate with the market, except vulnerable groups, and half of this active population used price comparison sites for energy. In addition, all indicated that consumers who used their websites looked for the cheapest deal to switch to because energy was all about price.

With regard to the key information which consumers want to know, participants commented that it was the amount of money they will have to spend on their energy. For example, one stated that *“what customers care about is how much their energy is going to cost them”* (CS3). Similarly, another highlighted that *“the main thing consumers want to know is the total*

cost that each supplier will charge for the same amount of gas or electricity” (CS6).

Nonetheless, most participants argued that, in the retail energy market, information confusion arose from the fact that there are many cheapest tariffs available across the country depending on a variety of issues, including: cost; region; payment type; regular amount of energy usage; meter with daily standing charge; meter with a higher and a lower tariff; and other special premiums. Many participants also expressed that this confusion significantly related to rates and calculation, and arguing that this reflected the roles of energy comparison sites in that they are in the retail market to help consumers easily engage with the market by aggregating all the energy deals and displaying them in one comparison table for consumers to be able to make the decision to switch.

Participants highlighted details consumers need to provide when entering energy comparison sites, including: 1) details of the supplier that the customer was with; 2) the name of the customer's tariff; 3) energy usage; 4) how much the customer spends; and 5) postcode, these details requiring just a few minutes to search through the system and customers then receiving a result table comparing the deal they currently have with all other suppliers' deals. This is critical as millions of consumers do not know their energy usage and that limits the role of energy comparison sites in supporting their market participation.

Throughout the interviews, most participants agreed that price/tariff information was too complex and ultimately put consumers off the market. However, one disagreed and raised an important issue by stating that *“complexity is not deterrent, what determines whether people are willing to switch or not after entering the comparison service is the available amount of savings”* (CS3). Similarly, another gave an example of a situation, where consumers entered their website and left without switching because of saving amount, stating that *“a lot of people visit our site and then the vast majority go away”* (CS6). These findings are coherent with the argument discussed in Chapter 4 with regard to the internal issue of switching energy suppliers where consumers did not see enough benefits from doing so. This reflects their critical attitudes relating to trust and confidence.

Discussion

From the above, it is evident that energy comparison sites play an important role in delivering impartial and useful information to consumers. The lowest energy price with the highest saving was the key product highlighted in the comparison table and used by these companies to inspire switching. This helps people to better interact with the market for their self-interest.

Previously, it was understood that the issue of information during the post-2003 period, including between 2003 and 2010, was significantly related to the complexity and a large number of energy tariffs. However, throughout the interviews with these companies, it seems that energy comparison sites work effectively, by helping consumers to save a lot of time in participating with the

market if consumers know their exact energy consumption. In other words, these energy comparison websites help to mitigate the degree of complexity relative to asymmetric information in the retail energy market. However, in order to access these energy comparison sites, consumers needed access to the Internet; in fact, millions of consumers cannot access the Internet, particularly vulnerable groups, and millions of non-vulnerable consumers usually switch suppliers via sales agents; for these reasons, confusion clearly remains. It is worth noting here that a lot of benefits are being offered online and are being missed by these people.

Another major concern highlighted above is that many people using comparison websites decided not to participate with the market, because the prices being offered were no better between suppliers and the savings on offered made switching not worthwhile. Again, this reflects the relation between the fact that savings have not been great enough for buyers to switch and the fact that electricity prices have increased sharply since 2003 (see Chapter 4). A sharp electricity price rise has an impact on market participation decisions by consumers, and vice versa. This reflects that Ofgem not only needs to ensure simplicity and transparency of price information but also a free price manipulation and a fair deal.

5.2 Improvement in regulatory regime relating to information

The stakeholder interviews in Section 5.1 highlighted that the issue of information mainly related to: 1) a wide range of energy products resulting in confusion with more than 5,000 tariffs being available in the UK retail market;

and 2) a high- energy price setting (price manipulation), causing high- electricity price information, whereby price conveys information, consumers using this information to decide whether they want to participate with the market or leave. What became the case was that consumers did not see a significant amount of savings in their market participation. These two concerns negatively affected consumer decision making, their confidence and trust, leading them not to make informed choices and not to benefit from the liberalised market. Regulation was suggested to be a sustainable solution in order to protect electricity consumers.

Many participants argued that it was important to use regulation to answer the electric energy issue; one clarifying that *“the supply of energy is not like any other product, it is an essential product and there is constant demand”* (J2). Similarly, one highlighted that *“with other commodities consumers can tolerate market failure; if electricity market fails then the system collapses instantly”* (S5). In relation to this, another emphasised the need to have the right use of regulation to answer the energy issue, and explaining that *“the issue of whether we need regulation is related to how competitive the market is right now”*. These statements clearly support the need to have improved regulation and its enforcement in the current energy market where a significant reduction in competition has emerged and critically affecting the interests of consumers (see Chapter 4).

It is important to now examine the interview findings and to analyse how regulation (licence conditions) can be improved, in order to answer the issue of price/tariff information.

5.2.1 Regulation in response to a wide range of energy tariffs

The wide range of energy tariffs has clearly created substantial confusion and disadvantaged the interaction between households and the market. As mentioned earlier, consumers were not confident in taking advantage of the market: some avoided taking the risk by not participating with the market, and some unfortunately purchased a bad product or an expensive electricity deal. In consequence, not only the market became less competitive and inefficient, but also exacerbating other issues, such as fuel poverty. Clearly, the analysis framework highlights the value of government intervention through an introduction of regulation in response to this issue.

Participants were asked to identify what method should be used by Ofgem in response to the issue, in order to improve the market and to increase the benefits received by consumers. More than half of the participants suggested improving the interaction between consumers and the market (the competition unit) as well as suppliers through regulatory information, such as billing information. Other suggestions were varied.

For example, one suggested to *“work on increasing their interaction with the market, helping people to understand how pricing works and how to get a better deal; looking at barriers to switching and encouraging more people to*

switch” (S3), with him concluding that it was important to have an appropriate method in making better use of the existing market element and an arrangement relative to information for better interaction. This reflects that regulatory information is a key element to help create the desired interaction between householders and the market.

Similarly, one stated that *“Ofgem needs to give consumers much better billing information about their energy and how much they spend”(CS4), and adding that “bills are very complicated and it is very difficult to work out what tariff you (consumers) are on and what price you are paying”. Equally, another stated that “better information is part of the solution so I think things like annual energy statements will help” (G4).*

In relation to the above, several participants suggested improving the billing format. For example, one suggested that Ofgem should improve by *“more standardised language on bills so it is easy to educate and inform consumers; they are going to look the same or have the same type of information (basic standard)” (C2).* Additionally, another argued about investigating billing details, asking Ofgem to examine how electricity is priced, stating that *“what the authorities need to do is to change the way that electricity prices are displayed (on bill)” (J3), and added that “Ofgem needs to change the way people are charged to be by unit rather than kilowatt-hours because it is difficult for people to work out”. These all highlighted how regulatory information on energy bills may be improved in order to promote transparent information and maximise healthy interaction between consumers and the*

market, in response to the issue where the availability of a large number of tariffs already destroyed competition.

Alternatively, one indicated what Ofgem needed to work on regarding information on bill, stating that *“consumers should be informed very clear how competitive that (current) tariff is compared to other tariffs offered by the company and also to the rest of the market”* (J2). One suggested that *“consumers should be able to tell from billing information more easily where their electricity is generated from, so they can make a properly informed choice about the tariffs on offer”* (SS5).

From the above, the notion of linking desired method to an improved energy bill was a common theme from many participants. Details relating to energy bills were discussed because confusion regarding bills still remains. According to the findings, regulatory information on bills should be developed to provide: 1) name of the tariff; 2) energy consumption relative to the money consumers have spent; 3) other related information used for encouraging them to calculate and compare energy usage. Nonetheless, it is worth noting here that, actually, in theory (see Chapter 2), these practices are commonly highlighted, discussed, and imposed. The problem here is that the issue of information in the UK retail electricity market still remains these days.

The above method regarding billing improvement might not be the only way to cope with all confusion; in other words, there might not be the need for Ofgem to create new licence condition for additional information on bills. Having said

that, billing information is necessary, helping people to understand what tariff they are on, as well as their energy usage and spending, but only improving this information may not help to resolve the confusion and trust issues. Any means to promote further transparency to support consumer confidence, allowing them to be less confused, would be advantageous. Regulatory information regarding billing, at present, should be developed towards the establishment of a basic standard/format. Information used within this standard should be for creating simplicity and transparency.

In relation to the above discussion, many participants recommended that energy price comparison websites could effectively help to mitigate the confusion issue. However, several participants raised an issue with regard to the website and confidence and trust. For example, one said that *“people do not always have the trust in them (energy comparison sites); they would rather do their homework or just stay where they think it is too much hassle (to deal with these websites)”* (CS1). Thus, the same participant promoted the need to have more requirements in response to this issue, stating that *“it is more a case of getting the Confidence Code out there that more people feel trust the comparison sites who are regulated to give the correct information”*. Others agreed with this argument and also urged Ofgem to take more action on the Code of Confidence that protects consumers when comparing energy tariffs on websites. Therefore, improved regulation on this tool is important.

According to the interview findings, use of price comparison websites is a practical way to cope with confusion arising from the diverse range of energy

tariffs and other related issues. It helps consumers face the least confusion because the system calculates every detail for them and shows them a comparison table. However, according to the interviews, the issue of trust was identified as a major difficulty with this method. Thus, it needs Ofgem and other related organisations to use their authority to clarify and campaign regarding the benefits and ease of use of these sites. For this reason, regulatory information should also be developed in association with provision of the Code of Confidence towards increased use of energy comparison sites for better interaction between consumers and the market.

In terms of information for vulnerable groups, who usually do not have a bank account or access to the Internet but who switched when representatives from energy suppliers approached them directly or through the use of door to door salesman, all agreed that developed regulation was important for these people in order to eliminate confusion and misleading information. For example, one noted that this kind of code of practice is called 'Energy Sure Code' and is run by the Energy Retail Association to govern the behaviour of energy sales agents, for which the participant stated that *"there does need to be some better regulation on that"* (C4), and further arguing that *"there is hardly any regulation on telephone sales too"*, which also required Ofgem to take action.

Alternative methods to increase interaction between those considered vulnerable and the market were also suggested. The participants, from the CAB, urged Ofgem to always support the energy programme, known as the

Energy Best Deal, in order to directly provide vulnerable groups with adequate necessary information for their market participation. For elderly people, one regarded the method Ofgem needed to focus on as “*supporting communication process*” (C6), in that could be made through communities, friends and families, to provide them with “*up- to- date information*” through a billing statement.

From the above discussion relating to vulnerable groups, the interview findings show that there should be more licence conditions regarding better information for those considered vulnerable. First, Ofgem and other related organisations need to generate regulations to ensure that these people are protected from mis-selling, deception, scam, disguise and other misrepresenting information by sales agents. Second, regulatory information should be developed and used in order to deliver more energy information sessions to communities, whereby the authorities could connect to consumers directly by offering them face-to-face information. Third, up-to date billing information is also necessary for vulnerable groups.

On the other hand, participants from the energy suppliers agreed that it important to support the interaction between consumers and the market. However, most argued that existing obligation regarding providing the necessary information for consumers was intense enough in the market system; therefore, opposing the high use of regulatory information and urging Ofgem to ensure that licence conditions would effectively deliver what consumers really want to see and what consumers want suppliers to provide.

Moreover, most considered current billing information was too confusing with too much information for consumers. For example, the Scottish Power representatives highlighted that all existing regulatory information was relatively intense for suppliers and consumers, and commented that *“people are wanting bills that are relatively straightforward and simple; they do not want lots of paper”* (SS11), with them suggesting to Ofgem that *“it is always about simplicity and effectiveness that we really like to see in licence conditions”*.

Similarly, the SSE representative highlighted that there was a conflict in that the company had to provide the information on the bills but consumers thought that there was too much information and they did not understand, with her stating that *“there is an awful lot of information on the bill that we are required to provide”* (SS7) , and added that *“our concern was that in providing all of information, which Ofgem asked us to do, consumers might not read all of the information; what consumers want to know is how much they owe the company”*.

From suppliers’ perspectives, information on bills is now too much for consumers, and they will never read nor use all of the information. There is no basic standard/format for suppliers when providing billing information. It seems that all suppliers attempted to provide consumers with too much information without a practical format, which confused consumers. Accordingly, simplicity and transparency, towards the goal of effectiveness, where consumers could potentially use that information for better deals were

actually the notion needing to be focused on by Ofgem. For these reasons, regulatory information should be developed and used to ensure that billing standards are structured.

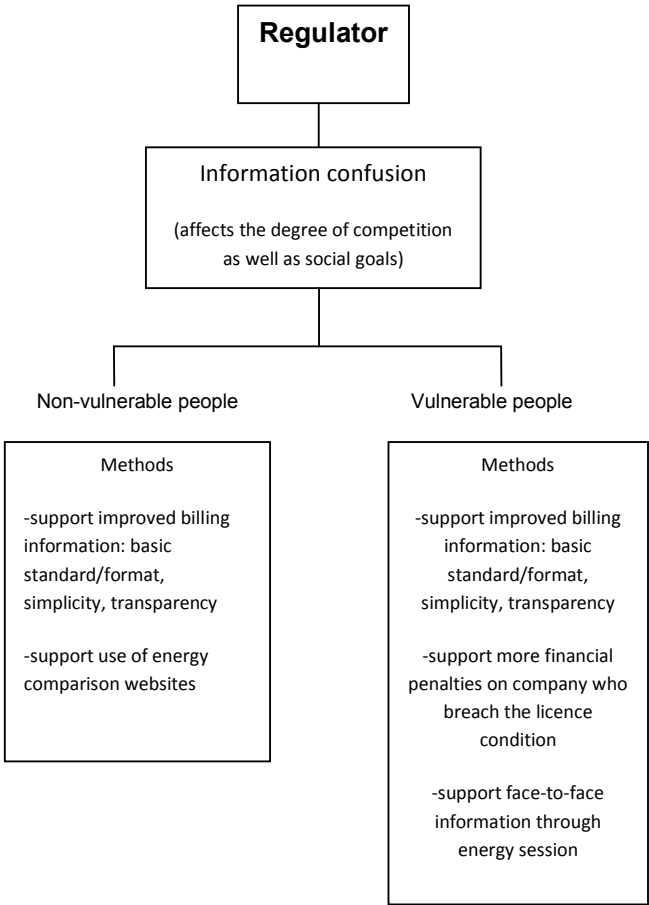
Discussion

An improvement in regulatory information and its enforcement is key, being the main response to the issue of information in the retail electricity market. A licence condition on improvement in billing information is required for structuring a billing standard/format to be used for providing simple and clear information to all UK householders. This is considered to be a constructive method in delivering fundamental details to consumers regarding their energy. In terms of the ways to be used for avoiding any confusion, arising from the amount of tariffs in the retail system; the two types of consumers need to be considered. For non-vulnerable people who can access the Internet and who are perhaps more able to benefit from the market regardless of payment method, using energy comparison sites could provide a solution for delivering the quality information. For this reason, a licence condition on improvement in practice and code is required, in order to increase consumer confidence and trust and to provide reassurance for consumers that all information on these sites is independent, impartial and comprehensive. Thus, as a result of empowering consumers to use information and to make informed choices, internal strength of the system, can be secured.

For vulnerable groups, a licence condition is also needed to avoid confusion; at the same time, ensuring confidence and trust. First, regulation is required to

control sales agents' behaviour; a heavy financial penalty for companies who breach the licence conditions regarding misleading information and deceptive guarantee should be introduced and imposed. Financial penalties could be much higher in order to demonstrate the importance of the offences. This would prevent detrimental outcomes as well as protect those who might otherwise be suffering from fuel poverty in the retail electricity market as a result of being plagued by problems of information (asymmetric information). Second, face-to-face energy sessions are meaningful and can be carried out in all communities, in order to inform consumers about how the market works and how to interact with the market. Figure 5.2 (a) lists the methods that were identified by participants for Ofgem to focus on and regulate.

Figure 5.2 (a): Methods suggested be used and regulated by the regulator in order to answer information confusion through increasing their interaction with the market



On the other hand, according to previous discussion in Section 5.1.1, it can be seen that small energy companies have used an impressive strategy for information provision, by maintaining a small number of tariffs on the market. As a result, these companies received no complaints with regard to information confusion. Therefore, it is important that Ofgem considers regulating electricity tariffs, thereby allowing suppliers to create a valuable range of choices, although not too many, because too many tariffs confuse

consumers and have a detrimental effect on information as well as the degree of competition.

5.2.2 Regulation in response to a high- energy price setting

The issue of high-energy price setting/information is associated with the fact that electricity prices have been increasing sharply since 2003, including the period under discussion between 2003 and 2010 (see Chapter 4). As consumers were informed by price and tariff information, therefore, this high price issue directly affected competition unit and market participation by consumers. People could not perceive enough saving or positive gain from interacting with the market and switching suppliers (see Section 5.1.3). One highlighted that *“the gains from the market are going to get smaller and smaller” (C1)*, and arguing that *“this is not real competition because we do not know what is going on with prices”*, while another stating that consumers understood that *“prices are very similar” (J2)*. This disadvantage arises from a market being plagued by the issue of price information relating to high-price setting, unfairness, market power, collusion and pricing inefficiency (internal factors). Clearly, the analysis framework highlights theories and related laws and legislations validating the value of government intervention through an introduction of regulation in tackling this issue. The goal is to ensure adequate consumer protection and to enhance equal opportunities for affordability for everyone in society.

The issue of the provision of information relating to confusion over switching suppliers and its solution have been discussed above. However, it is now

important to investigate what should be done to resolve other unfavourable internal issues since these lead to high-energy price setting/information and, in consequence, diminish the interact between consumers and the market.

Previously in Chapter 4, other unfavourable internal factors/issues relating to high-energy price setting were discussed, including: 1) a number of inappropriate mergers relating to market power, price lifting and tacit collusion; 2) the social energy tariff scheme relating to social cost being passed on to consumers; and 3) Ofgem's failure, these factors all being considered important and requiring regulatory solution to be implemented that helps to sustain a fair price information for householders.

Participants were asked to identify what method should be used by Ofgem and the government in order to address the problems as well as to improve the market and increase benefits for consumers. Many of them stressed that sensible use of regulation and enforcing Ofgem's authorities were necessary, in order to resolve these issues. The notion of linking solution to use of regulation was identified in various ways below.

1) Inappropriate mergers, market power, and collusion

With regard to the issue of there being a high-energy price setting as a result of inappropriate mergers, market power and other related issues, this relating to only a small number of firms existing in the marketplace, several participants underlined the need to have more companies entering the market, and urged Ofgem to use their power through regulation to advocate

this. For example, one expressed that *“it is very difficult for new companies to enter this retail market. Over the last four years there probably were three or four companies that tried and failed”* (CS3). One asked Ofgem and the government to encourage *“investment”* (SS3), and one recommended that Ofgem look at *“barriers to entry”* (S3) so as to ensure better competition and flexible market. Another commented that *“if we had companies able to come in to this market easily, even if they did not come in but they were able to come in, then the Big Six companies would be less comfortable because they would feel they were threatened by entrants”* (S6). This reflects a scenario, where the existence of a small number of energy companies in the market was unlikely to be temporary; at the same time, entry and exit was neither effortless nor costless. What the contestable theory suggests, therefore, cannot be applied to judge market performance in this regard (see Chapter 2). The participants clearly raised such issue of critically long-term market power, and a market not being able to best perform under this all-encompassing power, this leading to excessive price manipulation. This again justifies the need to use regulation to support and secure internal strength, such as the effective power of consumers, as well as to decrease weaknesses, such as unfair price/tariff information (see Stiglitz’s argument).

In relation to the above situation, one recommended Ofgem to *“refer it (inflexible market relative to competition problem) to the CC (called Competition Commission referral)”* (C1), with him clarifying that this should help to investigate whether there was anti- competitive practice in relation to market power and price manipulation in the retail market, and to accurately

identify the issue. In consequence, this approach allows the system to be examined, as well as provide a solution with regard to high-energy price setting relative to inappropriate mergers. At the same time, the degree of competition and the power of consumers can be maximised

2) Social tariff scheme

Previously, in Chapter 4, the issue of the provision of a social tariff for vulnerable people led to a critical situation, whereby suppliers passed on huge costs from non-market objectives to consumers. Several participants argued in favour of direct subsidies or a benefit system relating to social obligation. For example, one stated that he was not convinced that implementing a non-market objective such as a social tariff scheme on a mandatory basis for all suppliers, as well as making them pay for this, was the best way to tackle the social issue. He went on to say that *“what you have with social tariffs is one set of customers paying for a benefits to be given to a different set of customers”* (G4), and urged Ofgem and the government to *“tax this through the tax and benefit system”* as a means to sustainably answer the problem of fuel poverty. The notion of linking a sustainable way to address social obligation to direct subsidies was a common theme for these participants. This approach helps to avoid high energy bills for non-vulnerable consumers who, as well being affected by the global financial crisis, are at risk of falling into fuel poverty.

Many participants felt that supporting people with money (higher income) could help to tackle the symptom of fuel poverty, while the social tariff was

recently found relatively ineffective in tackling fuel poverty and provided little value to those considered vulnerable. For example, one suggested that *“if you (the government) want to help poor people you (the government) should give poor people more money by giving them more income”* (S6). Another argued that that *“if consumers have a higher minimum wage, that means that people can afford to buy their energy”* (SS4). Clearly, these participants focused on using a method to help vulnerable groups have sufficient money to pay expensive electricity bills. This approach is important; not only because it is a solution for the poor, but because it also ensures fair energy prices for other households.

There was also a notable exception among participant, with regard to methods to resolve the effect of high-energy price setting. One recommended that *“there should be an extent where price can be set so we have a limit of what they are actually earning; so if companies are earning over a certain amount then they should give some of it back to their customers”* (CS1). Similarly, one also suggested that *“there should be proper returns; people are already paying for it and they need to have returns on that”* (C1).

The above interview findings all reflect similar discussions relating to advocating the government to be responsible for social obligation and energy poverty. This approach helps to provide sustainable protection for vulnerable groups, at the same time helping to ensure fair energy price information for other households.

3) Ofgem's failure

Previously in Chapter 4, Ofgem's failure (poor performance) was examined, using empirical evidence to identify their performance relative to the issues. This related to energy prices during the critical post-2003 period, including between 2003 and 2010. It can be seen that their failure related to poor internal strength and increased weakness. The Ofgem Probe into electricity supply market was launched in 2008, this also implying that Ofgem had admitted that they had failed to regulate the retail market. Additionally, the issue of Ofgem's failure partly relates to the argument on regulatory capture. For these reasons, it is now important to examine how regulation can be changed and what the regulator can do to ensure economic and consumer interests.

One of most significant issues highlighted by most interviewees was with regard to the link between retail prices for consumers and wholesale prices. This relationship has recently been debated, in particular with regard to electric energy. A hedge contract was in place, whereby energy was bought in advance at least six to twenty-four months beforehand. Unfortunately, final prices for consumers were not linked with prices in the market when the contract was being arranged. As a result, electricity prices have been increasing and, therefore, the role of Ofgem was questioned. In relation to this, one suggested that *"Ofgem should have greater power to act against companies which fail to lower their prices in line with falls in wholesale prices"* (J2). Another commented that *"Ofgem needs to have teeth and needs to be strong enough to be able to impose penalties to force suppliers to do things"*

(CS5), with him giving an example that *“in 2008 when prices went up by 50%, this is the underlying process, the consumer prices went up by 55%, so the price rise of the raw material was matched by the price rise to the customer on the way up, but on the way down it has not”*. Similarly, one mentioned that *“it is quite easy for the companies to make sure that it does not appear that they are making very large profits from their retail electricity business”* (S5), adding that *“if Ofgem was being as tough as they should be then they would have tried harder to make sure that they had enough information to check whether the companies were making excessive profits”*. One argued for Ofgem to act on *“transparency”* (G1), in order to resolve the issue.

The notion of a good regulator using their authority in response to the problems, where necessary, was also an important theme throughout the interviews. According to Stiglitz, inadequate regulation would affect economic and consumer interests; thus, Ofgem’s power, in addition to the use of adequate regulation, would allow the market to perform successfully.

In addition, alternatively, the participant felt that the fine (financial penalty) that suppliers have faced *“is very weak”* (CS5); for this reason, he thought that Ofgem should exercise their power by increasing penalties worth *“X million pounds”*, while one urged that *“Ofgem needs to stop assuming consumers can switch to get better deal with a big saving amount and get themselves out of it and they need to make the market as a whole work”* (C1). Furthermore, participants advocated sufficient and effective market system monitoring in order to ensure a better performance from Ofgem. For example, one said that

“there needs to be a lot of monitoring going on to see actually how consumers are engaging in this market and what suppliers are doing, and to ensure that any consumer detriment is dealt with” (C4). Clearly, these participants were concerned about effective penalties, the value of switching supplier, and sufficient investigation and evaluation of the market by Ofgem. This can help to guide the regulator in what to regulate.

Discussion

As discussed, despite people receiving comprehensive information and understanding how the market works, they may leave the market without making an informed choice due to prices being high and savings being low. Therefore, regulation is required in order to resolve the source of high price information relating to high-electricity price setting in the UK

In terms of market power occurring as a result of inappropriate mergers, one source of high-price setting, regulation is needed to advocate sufficient market entry, since the interview findings implies long-term market power from just a few energy companies: the ‘Big Six’. Clearly, the market is not self-correcting in this regard. According to Stiglitz and the theoretical framework, intervention needs to take place in order to maximise competition against this long-term market power. In addition, Competition Commission referral is required for market investigation in order to address the issue relating to inappropriate mergers. Failing to refer market investigation to the CC resulted in Ofgem being strongly criticised as being captured by the interest of energy companies.

In terms of social cost being passed on to consumers, this being a significant issue relating to high-electricity price setting, all companies have to survive by the use of cross subsidies, although this is prohibited, but there is no way to investigate their financial accounts. However, regulation may not be the best solution. Having said that, because of the social tariff scheme provided by suppliers it is inevitable that non-vulnerable consumers would pay more to support the poor; otherwise energy companies to soon leave the market. This means competition is ended; in other words, there is no room for energy companies to remain because they cannot stay profitably. Some suggested supporting social obligation through the taxation system or ensuring their higher incomes (the government needs to give people money). It is worth highlighting here that this would lead to the same result, by taxing people to give them more incomes or allowing taxpayers to pay for this social cost. That is to say that it would be difficult for non-vulnerable people, particularly in the current economic climate.

Additionally, some suggested considering mandating the energy companies returning profits to support social obligation and vulnerable groups. This is also seen as giving the same result as providing the social tariff, meaning that the problem will remain. In addition to this, according to the theory (see Chapter 2: Roberts et al.), there are three methods that can be used to resolve this issue, including: 1) government intervention through social policy, not energy policy; 2) taxation; and 3) a cross subsidy. Having said that, it is important that government intervention takes place so as to deal with the

issue; this can be determined through social benefit system and is therefore beyond the scope of this research. Future study may be meaningful.

In terms of Ofgem's failure giving an impact on pricing, this is a critical weakness of the system that needs to be immediately resolved. Strengthening Ofgem's role can help to increase strength, and at the same time reduce the weakness. Ofgem needs to improve regulation in order to support further market entry and addressing market power arising as a result of inappropriate mergers. In the case that there needs to be extensive investigation, Ofgem needs to refer market investigation to the CC. Ofgem themselves should focus on better monitoring of the market and implementing remedies in order to ensure better market function as well as price efficiency. With regard to social obligation, the government should carry out all the process to meet the social goals; not Ofgem.

5.2.3 Improvement in the regulatory regime in the light of consumer interest

The study sought to analyse an improvement in the regulatory regime in the UK retail electricity market needed to be applied within the system so as to ensure an increased level of consumer benefits. The interview findings below show what stakeholders thought could be a potential way to improve regulatory regime. However, the results did vary.

Participants were asked to identify to what extent they think the regulatory regime in the UK retail electricity market needs to be reformed and to suggest

possible alternative approaches. Half of the participants offer various approaches. Some thought that it was not necessary for it to be reformed, while some felt uncomfortable to suggest it and refused to do so. Many were opposed to more regulation (intervention), while others were firmly in favour.

Many thought that regulation in a poorly functioning market, such as the electricity market, is acceptable towards achieving the social goal. For example, one thought that the regulatory regime of the electricity market needed to be improved for *“the poor”* (CS6). Similarly, one emphasised the relationship between an improved regulatory regime and the importance of ensuring adequate protection for vulnerable people, stating that *“the regulator can help by looking into the fuel poverty people because the poor have difficulty in paying their bills”* (CS6). Another thought that the market system was not actually delivering for consumers, particularly for those considered vulnerable. For that reason, he suggested that *“we would like to see regulatory regime changed so that they primary focus is actually on making sure the vulnerable groups do get a good deal and they are not taken advantage”* (G4). Equally, one suggested the need to bring in *“a consumer champion (to be the regulator), somebody who looks at the whole market from a consumer’s perspective rather than from the industry’s perspective or to take a more consumer focused role”* (J3), with him further stating that *“the government also need to give Ofgem some serious powers to make sure that the suppliers are playing fair with the consumers”*. In addition to this, one valued *“greater transparency in the energy market”* as a key theme to help

delivering benefits to consumers (G1), and highlighting that *“this could be achieved through an improved regulation”*.

In relation to the above, one recommended the regime having sufficient power to effect and influence in reality, stating that *“what needs to happen is that the regulatory regime has to actually have physical power”* (CS5). Another referred to the need to improve the regulatory regime as *“it needs to think afresh about its priorities as well as keeping energy generation going; so it needs to impose much tougher oversight, control on the industry to ensure that it delivers a good deal because at the moment energy prices are too high because there is insufficient control exercised by Ofgem”* (J2).

On the other hand, one response of an improved regulatory regime suggested that what we need *“is not a change in regulation but concentrate on good regulation”* (C1), with him arguing that good regulation for the supply sector was about *“protecting the consumers who cannot interrupt the market”*. Additionally, he stressed about *“getting Ofgem to use the power”* to protect the poor. Similarly, one expressed that *“I do not think adding more regulations would be the process; it would just be more a case of looking at what we have got (regulation)”* (CS1), with him suggesting to make what we have more effective.

A further response in favour of an improved regulatory regime argued that the system would inevitably soon face the period of moving back to applying price regulation, stating that *“may be that we have to move back to regulation of*

final price and not expect competition to deliver good benefits in the retail energy market” (S6). The same participant clarified that the government and Ofgem can *“regulate it without it being nationalised”*, with her stating this on the grounds that *“the retail competition is too difficult in electricity market for households, not for companies”*. According to hers, there are many elements for competitive market that has been missing

Another highly recommended withdrawing retail competition, explaining that *“as it does not work, and the regulatory regime needs to be completely reformed (S5)”*. He pointed out that Ofgem needs to *“change the management and bring in people that are prepared to be much more interventionist and much tougher”*, and arguing that Ofgem were too optimistic about how effective competition was going to be in the energy market. In addition, he stated that *“now is the time to apply (appropriate) regulation because the belief in market in the public is not as strong as it has been as a result of financial crisis; people are now realising that regulation is there for a good reason and it needs to be serious and tough”*, with him further highlighting that there was a lack of necessary regulation in the system. He suggested this for several reasons, his two major concerns being: 1) the issue of the unconstructive relationship between wholesale and retail markets, resulting in inefficient retail prices for households (high-energy price setting); and 2) the method of tackling fuel poverty through the liberalised market, to date, has not been successful and society is facing fuel poverty with death rate increasing three-fold since the law (regarding social tariff) was passed in 2002. In relation to the above suggestion, he additionally suggested that Ofgem and the

government should apply a new system with a single buyer, whereby there is one separate organisation/authority, whose responsibility is to purchase electricity from companies and later to sell this energy to all retail suppliers on the same terms, with this helping to maintain energy price in the retail system.

One interesting view was that it is worth returning to nationalisation. A few participants thought that it was important to either return to regulated system or impose specific regulations, whereby the government can ensure how consumers are treated. For example, one stated that *“to renationalise the industry with no more competition would help consumers”* (C2), and clarifying that *“there are lots and lots of problems (in the energy market); Ofgem have gone some way in the probe to address some of remedies, but maybe more is required, which I think there is certainly more required for low income, vulnerable, disadvantaged people and people who have not engaged in the competitive market”*.

An alternative view suggested to particularly improve the regulatory regime for *“encouraging more investment”* (SS3). Additionally, one noticeably urged that the regulatory regime should be improved to support consumers to use less energy in order to obtain benefits for themselves (to have cheaper bill) and also for environmental benefits, arguing that *“this has not really been looked at by Ofgem”* (CS3).

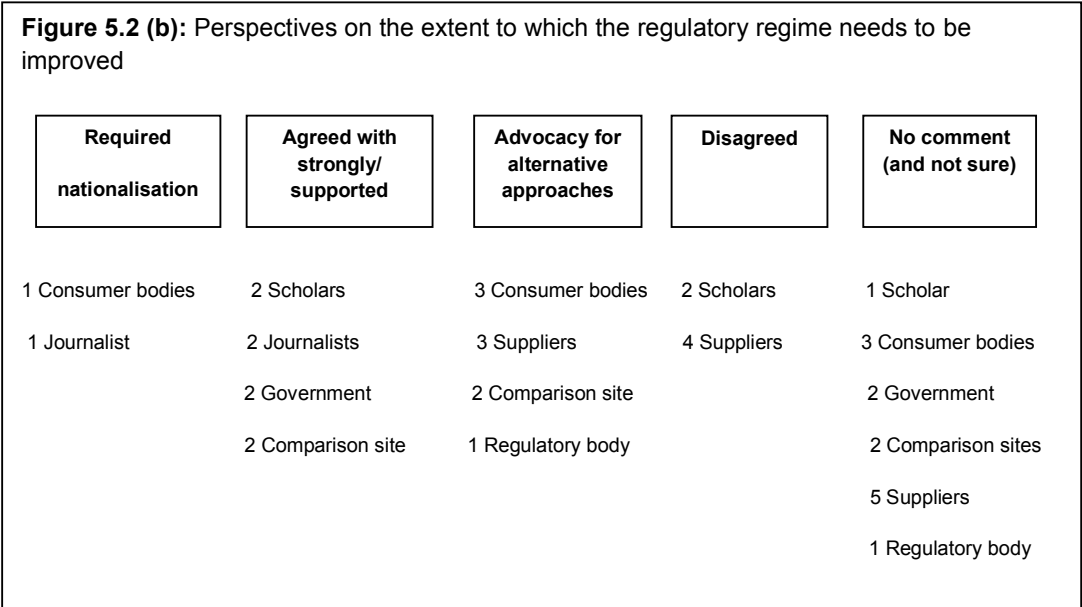
The responses of opponents to an improvement in the regulatory regime were also varied. For example, one commented that *“there is quite a bit of*

regulatory pressure at the moment” (S4), further arguing that *“if we move away from that (the current regime) to a regime where the government decides all the prices and maybe keeps the price low for social reasons, that is going to lead to more trouble”*. Another highlighted that *“I do not think that the regime should be reformed in any significant way”* (S3); with him further arguing that, rather, the government needs to only focus on sustainable methods of energy generation as a primary concern. In addition to these arguments, all of the large suppliers were opposed to relating the solution to use of regulation.

Nonetheless, one of regulatory bodies’ representatives considered three factors relating improved regulation. He explained that *“it needs to be improved around the sort of protecting vulnerable consumers”*, and went on to say that the others associating with *“encouraging new entry as well as increasing liquidity in electricity market”* (R2). In relation to this, the representatives from Project Discovery (run by Ofgem) valued the use of regulation relating to government intervention, as government impact and guidance influences the direction in which the energy system would have to develop in order to best deliver its objectives. However, the participant commented that in terms of consumer interests in this era *“it has a number of aspects to them so obviously there is the costs that the consumers face but consumers also want to have a secure supply”*, and indicated that *“we (Ofgem) have to balance these things all of which are in the consumer interests to try and come up with the best mix”* (R1). This implies that an improvement in the regulatory regime to benefit consumers was in their

policies. However, it has not yet been addressed since there are many important factors needing to be taken into account such as the issue of energy security.

With regard to the need to improve the regulatory regime, participants' responses fell into five categories: 1) required nationalisation; 2) agreed with strongly/supported; 3) advocacy for alternative approaches; 4) disagree; and 5) no comment (and not sure), as shown in Figure 5.2 (b).



*One interview recording was partly damaged.

Discussion

Interestingly, half of the participants supported using regulation as a way to respond to the recent problems (see Figure 5.2 (b)), although, suggestions were varied. This implies the significant value of an improvement in the regulatory regime in the UK retail electricity market. Obviously, the aspect of consumer interest was the major focus throughout the interview findings. The

participants connected an improved regulatory regime (with a productive authority exercised by Ofgem) to the goal of 'adequate consumer protection', particularly for vulnerable groups, whereby this goal was identified in line with Stiglitz's argument and national and international legislation.

Clearly, transparency and the provision of sufficient necessary information were highlighted, these being suggested to be processed through an improved regulatory regime in the interests of consumers. Others supporting findings relating to bringing in a consumer champion and compelling Ofgem to use their authority and become more strict with suppliers reflect a lack of regulation enforcement and accommodating managements. According to the findings, Ofgem appears to have significant shortcomings in ensuring consumer interest. Therefore, specific regulation to enhance internal strength, especially with regard to the required information towards transparency and the effective means to enforce it by the regulator, as examined in Sections 5.2.1 and 5.2.2, are required. Again, this also highlights that an effective and efficient regulator is the core part of a developed regulatory regime.

In terms of the notion of bringing in a consumer champion to the system as a method to ensure the light of consumer interests and to resolve the fuel poverty issue, this was stressed in the interviews and it could be of use. However, it is worth noting here that the regulator's job is to maintain competition in the marketplace and to ensure that consumer interests are protected by efficient operation of the market. Ofgem deserves to be criticised if the intensity of competition is low and affects pricing. Equally, if the interest

of consumers was distorted by, for example, poor internal strength and weakness, such as poor information, occurring as a result of inappropriate practice by suppliers and of the failure to interact with the market by consumers, then, Ofgem needs to be investigated and deserves to be blamed. Unfortunately, the requirement with regard to the social issue is not their responsibility. Ofgem's authorities would neither relate to providing them with financial support nor mandating suppliers to provide free services, but helping to mitigate the effects of: 1) a large number of tariffs, which resulted in asymmetric information and adverse selection; and 2) high energy costs, as well as supporting better decision making in market participation. Other than these, Ofgem could also support administering all social schemes.

Alternatively, some participants thought that it was important to return to nationalisation for better benefits for consumers. In fact, it is difficult to return to a regulated system at a time when the global financial crisis is such a threat. Some urged Ofgem to apply and impose the existing good regulations by implementing a practical means of enforcement relative to Ofgem's duty and authority.

In summary, in this era when there are many varying challenges occurring inside and outside the system, some issues have become more complex, and the market is not self correcting; for this reason, an improvement in the regulatory regime in relation to better and sufficient information clearly becomes meaningful for the interests of consumers.

5.2.4 Research findings: discussion and conclusions

The stakeholder interviews explore the sources of the issue of information in the UK retail electricity market in Section 5.1, which relating to: 1) confusion and asymmetric information arising as a result of the existence of a large number of energy tariffs in the market; and 2) high-energy price setting occurring as a result of the influence of several factors. In relation to this, the interview findings identify methods to be used by Ofgem and related organisations in order to increase the degree of consumer benefits while securing the economic growth (see Section 5.2.1, 5.2.2 and 5.2.3).

With regard to the former issue, in Section 5.2.1, most participants referred to better billing information, which can be made through clearer presentation in the billing format, as a practical way to help mitigate information confusion for all consumers. Supporting consumers to use energy comparison websites was considered important throughout the interviews. The participants viewed this approach as a productive way of helping to facilitate householders to easily participate with the market without confusion. However, the participants also highlighted that the issues of confidence and trust still needed to be resolved. According to the interview findings, regulations and its enforcement relating to an improved standard billing format and the assurance of information provided by energy comparison websites are required; Ofgem needing to sufficiently exercise their authority towards these objectives, in order for consumers to be able to benefit from the retail market system.

In terms of vulnerable groups, the participants favoured three desirable methods to be implemented, with the aim of helping them take advantage of the market as well as ensuring their interests were protected. Better billing information with a clear format was again highlighted as a way to end their confusion, at the same time supporting them more in their interaction with the market. The participants also acknowledged the need to protect vulnerable groups from any anti-competitive behaviour from sales agents who deliver misleading and deceptive information. Finally, the participants identified face-to-face information as a productive way to inform vulnerable groups about how the market works and how they can effectively participate with the market. In addition, regulation on an appropriate range of energy tariff in order to help mitigate confusion arising from the current large number of energy tariffs in the market would be very useful. However, this needs future study.

With regard to the latter issue, in Section 5.2.2, participants' perspectives on the method to be used, in order to address the issue of high prices as a result of high-energy price setting by suppliers, were varied. Interestingly, the participants related the methods suggested to different issues regarding high price information. The participants highlighted the need to create regulation in order to address the issue of market power arising from inappropriate mergers. In addition, Competitive Commission Referral was suggested. This means that Ofgem needs to improve the regulatory regime in relation to supporting more investment against market power and to support more market investigation under the CC's power. The social obligation was also discussed, but most suggestions were outside Ofgem's remit. Additionally,

according to the interview findings, the perceived weaknesses of Ofgem included failure: 1) to investigate market power relating to the unclear link between wholesale and retail prices that affect high- energy price setting; 2) to ensure competition relating to market entry; and 3) to implement sufficient monitoring on market performance and competitiveness relative to consumer benefits. Ofgem's role was questioned throughout the interviews (see also Chapter 4). The interview discussion clearly shows that Ofgem did not exercise their authority adequately in order to ensure advantages for consumers; thus, Ofgem's role needs to be improved as part of an improved regulatory regime. Moreover, if they had, they would have referred the market investigation to the CC and the long-term market power issue (with collusion) would not have existed. Having said that, clearly, Ofgem was captured by the interest of the industry; however, it is important to also carry out future study with regard to the responses by suppliers to Ofgem's requirement in order to verify this argument.

Finally, the participants' perspective on the extent to which the regulatory regime in the UK retail electricity market needs to be improved/ reformed was identified in Section 5.2.3. Contrasting opinions over the issue were significant and they suggested a wide range of solutions for an improved regulatory regime, but half of the respondents decided to support improvements in light of consumer interest and adequate consumer protection in association with appropriate information and better interaction between consumers and the market. Clearly, suppliers were opposed to an improvement in regulation and

its enforcement, arguing there were too many regulations in the market, in particular relating to better information provision.

Nonetheless, clearly, the above discussions all reflect the argument that it is now important to address a developed regulatory regime in the retail electricity market; this being completed the interests of consumers will be met.

Chapter 6: Discussion and Conclusions

In this chapter, the results are discussed and compared for consistency with earlier research findings in Section 6.1. Section 6.2 provides the summary of conclusions, including the clear picture of how the research question can be answered. Sections 6.3 and 6.4 discuss future research and recommendations, respectively.

6.1 Overall discussion

The study clearly addressed the problem within the retail electricity market during the post-2003 period, including the studied period between 2003 and 2010. This is similar to other earlier research conducted during the era of market orientation with regard to the source of pricing information. For example, many researchers have found market power to be the major source of the problem affecting service prices in the retail system (see Chapter 3, for example, Woo et al. 2003). Importantly, most researchers have shown that the interests of consumers in the UK retail energy market have not yet been met, and information regarding knowledge was found to relate strongly to disadvantages (Ipsos MORI 2008; Sioshansi 2006; Rowlands et al. 2004). This research findings, however, has added some details to earlier findings. First, price/tariff information is confusing because of the existence of a significant number of tariffs in the retail market arising as a result of product development by the energy companies. Second, confusion associated with the degree of asymmetric information between energy suppliers and

householders has become the greatest weakness and exacerbating other related factors. Third, the findings of the research also show high price/tariff information relating to high price setting (market power) and minimal savings, resulting in people avoiding the retail market and benefits not being delivered to them.

In terms of the original research question relating to knowledge gap, the question was formulated as 'how the regulatory regime in the retail electricity market can be improved'. The findings were used to analyse this possible improvement, including an examination of Ofgem's performance. In fact, the need to improve regulation and its enforcement in response to the interests of consumers was also highlighted in several earlier researches: for example, one found market power resulted in consumers receiving the least benefit from energy efficiency and the liberalised market system, causing pricing inefficiency; for this reason, support using regulation was strongly emphasised (see Chapter 3, for example, Brown 2001). On the other hand, many found Ofgem to be captured by the interests of the industries, arguing the need for further reform (see Chapter 3, for example, Newberry 2002; Tenenbaum 1996; Anderson 1981). This research, however, can be compared to the above studies. The research has added many important details to earlier findings. First, the research chose to focus on an improvement in the regulatory regime of the UK retail electricity market, which differs from the earlier works. Second, the study originally looked at the link between the method to be used and the provision of poor pricing information. Third, a guarantee strategy used in response to asymmetric information and adverse

selection was evidenced in this study. However, this was found to be opposite to the theory (See Chapter 2).

Fourth, the study focused on the link between the solution to be applied and the influence of both internal and external factors on the market, particularly the latter recently becoming a serious threat to the system with the market was not being self-correcting (see details in Chapter 4). The research also related these challenges to consumer interest and consumer safeguarding, including those considered vulnerable. Fifth, the research only focused on examining the current stage of the problem, indicating the most critical factor, price/tariff information relating to the perspective of asymmetric information, needing to be resolved, this calling for regulatory information and the appropriate means to enforce it. Finally, the research examined Ofgem's performance, showing that Ofgem did not exercise their power adequately, partly because of their 'culture', keeping away from exercising too much power and making regulation temporary. In relation to this, the research also looked into Ofgem with regard to the argument relating to regulatory capture, providing empirical evidence that Ofgem failed to refer market investigation to the CC. Clearly, there have not been any previous studies relating to all these challenges taking place between 2003 and 2010 in the context of an improvement in the regulatory regime.

In short, the above reflects the contribution to knowledge, where a knowledge gap in Chapters 2 and 3 or the original question formulated in Chapter 1 can now be addressed.

6.2 Summary of conclusions

This section details summary of conclusions and some recommendations, aiming at providing a wider picture of how the research findings presented in Chapter 4 and 5 relate to the theoretical framework, the knowledge gap being examined in Chapter 2 and 3, and to the original research question in Chapter 1.

Chapter 1, Introduction, introduced the study with discussions around aspects of the current problem within the UK retail electricity market. This includes: 1) high electricity price; 2) a number of people falling in to fuel poverty; 3) more people dying as a result of cold-related illness; 4) market failure as a result of changes within and outside the market system; and 5) the impact of the issue of information on the degree of competition and on the interests of consumers. An application of regulation was highlighted as a way to resolve the problem. The research question was formulated as how the regulatory regime in the retail market system can be improved in order to answer the problem.

In Chapter 2, Theoretical Framework, the analysis on the theoretical framework, the study shows that the emergence of internal and external factors has pressured the competition unit, affecting the interests of consumers; especially, the issue of market failure relating to pricing information. This included complicated, misleading, deceptive and unfair pricing information, with all being weaknesses and creating a significant reduction in competition. The need to apply appropriate regulation and best

enforcement in the market system, in order to address the problem, was strongly emphasised in many laws, concepts and theories, particularly in theory of Stiglitz. His looked at what needs to be done in the real world market where market power is not temporary and also information is far from perfect but severely complex. The goals are to maximise competition (facilitating the market to be more competitive) and to ensure that benefits can be sustainably delivered to consumers. His therefore is used to lead the theoretical framework of analysis in the study.

In Chapter 3, Literature Review, related literature was examined to clarify the current stage of knowledge and identify the knowledge gaps associating with the research question. Previous studies showed that benefits of lower electricity prices have not yet been delivered to people but householders, including the poor, have been left with worse deals. Studies also showed that further investigation into the issue of pricing information is important as it has recently affected the degree of competition in the market system and the interests of consumers. Many studies found that regulation was necessary for protecting energy consumers but not yet has been addressed in response to the problem, particularly the issue of the provision of retail price/tariff information. It was therefore worth investigating how regulation can be improved in order to answer this issue.

Chapter 4, A Historical Overview of the UK Electricity Sector, the chapter has shown that the UK retail electricity market has already had various changes in structure and regulatory policy and regulation but still has not been working

well. The problem took place as a result of the reduction in competition due to both internal and external factors. In consequence, electricity price rise have become a critical issue since 2003, including between 2003 and 2010. In the chapter, market power was found to be a long-term issue, interrupting market function, and seriously undermining energy price setting relating to pricing inefficiency (poor information). In addition, the issue of information confusion associated with: 1) asymmetric information between suppliers and consumers and 2) adverse selection in the retail market has been extreme and has affected retail electricity prices the most. It showed that consumer power has been affected; their interaction with the market and competition was poor and ineffective. Consumers' confidence and trust issue was also found to relate to unproductive pricing information. In addition to this, confusion associated with 'asymmetric information' and high price information allowed suppliers to keep vulnerable groups in fuel poverty. These all call for the regulator to take action to ensure that the interests of consumers are protected.

Also, the chapter showed that EU Directives, national Acts, and competition policy provide the regulator with the authorities to create regulatory practices and to impose them in order to protect energy consumers, in particular the vulnerable, where necessary. Unfortunately, it revealed that Ofgem failure in using their authority has been part of the sources of electricity price rises. The regulator failed to create the necessary regulatory practices and to exercise its power adequately, this to some extent relating to their 'culture'. A lack of tough regulation and its appropriate enforcement on suppliers, including a failure in referring market investigation to the CC, implies a closer relationship

between Ofgem and suppliers. It was a concern that Ofgem tended to be captured by the interests of energy companies.

In Chapter 5, An Analysis of the Improvement of the Regulatory Regime Relative to Information, in order to resolve the issue of information confusion, Ofgem clearly needs to improve the regulatory regime in relation to the following : 1) to support transparent information through a better billing format; 2) to ensure independently information on websites in order to help mitigate confidence and trust issues for those who can access the Internet; 3) to create tougher financial penalties for those who provide consumers with misleading information and deceptive guarantee; and 4) to advocate sufficient energy information sessions in order to deliver face-to-face information, with this again expected to mitigate their confidence and trust issues. In addition, there is the need to emphasis the effective means and tough action exercised by Ofgem. These all are aimed at ensuring an increased level of consumer benefits, especially the vulnerable groups.

6.3 Future research

Importantly, the methodology used in this research relating to referring information being the greatest weakness of the UK retail electricity market needs other related and stronger evidence to confirm this, and different approaches may be needed to better address this issue. Also, other approaches may be needed to gain greater insight with regard to how the regulatory regime relative to information can be improved.

In addition, this research has raised some important questions and has described limitations that still need further study before being answered. Some interview findings present a different view than that available from earlier research and it is worth developing further study. First, many participants thought that it was important that the relationship between wholesale and retail electricity prices was investigated. This is to identify how electrical energy can be priced fairly. Future research could help to develop a better understanding and to clarify this relationship. Second, many participant highlighted the need to apply government intervention in order to help protect vulnerable groups, because social tariffs were limited to funding. According to the findings, direct subsidies and direct financial support were argued to be helpful. Future research to clarify the opportunity for government intervention and its impact on the interests of non-vulnerable consumers will be meaningful. Third, many participants argued that Ofgem was too 'closed' to the energy companies. Further study to address this issue with more evidence should again be significant. Finally, future research to further relate the UK retail electricity market to the theory and concept of Stiglitz would create a wider picture of how consumer interest is linked to regulation.

6.4 Recommendations

The findings of this research highlight the issue of information confusion relating to 'asymmetric information' arising as a result of the existence of a large number of energy tariffs in the retail market. The author would like to make the following recommendations:

- The regulator (Ofgem) should seek a better solution in order to minimise the number of tariffs in the market.
- The regulatory should further investigate the energy tariffs provided by the small energy companies, which are simple and more transparent, and should create a tariff model for suppliers.

LIST OF APPENDICES

Appendix 1: Interviewees

Telephone and personal interviews provided by

1. Alex Brundrett

SimplySwitch

Energy Comparison Sites

London 3 March 2010 2:00pm

2. Andrew Hallet

Senior Policy Advocate

Consumer Focus

London 16 March 2010 11:00am (Interview has been scheduled.)

3. Ann Robinson

Director of Consumer Policy

uSwitch.com

Comparison Sites

London 8 June 2009 5:00pm

4. Audrey Gallacher

Head of Company Performance & Consumer Experience

Consumer Focus

London 10 June 2009 9:30am

5. Ben Castle

Strategy Manager

Energy Saving Trust

London 11 June 2010 3:00pm

6. Ben Woodside and Jamie Black

Economists

Ofgem

London 7 May 2010

7. Bill Bullen

Director

Utilita

Supplier Sites

London 22 February 2010 4.28pm

8. Chris Harris

Head of Retail Regulation

RWE Npower

Supplier Sites

London 4 March 2010 2:00pm

9. Dr Atipong Nuntaphun

Electricity Generating Authority of Thailand

Public Utility Sites

London 12 February 2009 10:00am

10. Dr Fiona Cochrane

Senior Policy Researcher/Policy Advisor

Which?

The UK's Consumer Association

London 13 November 2009 2:00pm

11. Dr Garry Felgate

Chief Executive

The Energy Retail Association

London 3 March 2010 4:00pm

12. Dr Richard Sills

Ombudsman team

Energy Ombudsman

London 24 February 2010 2:00pm

13. Dr. Sebastian Eyre

Head of Energy Regulation

EDF

Supplier Sites

London 17 May 2010 11:00am

14. Edward Harris

Economist

Ofgem

London 21 April 2010 2:45pm

15. Florian Ritzmann

Senior Business Development Director

lammoving.com

Energy Comparison Sites

London 26 February 2010 3:00pm

16. Hannah Mummary

Senior Policy Advocate – Company Performance and Consumer Experience

Consumer Focus

London 24 February 2010 11:00am

17. Ian Walls

Green Energy (UK) Plc

Supplier Sites

London 16 February 2010 12:48pm

18. Jessica Cracker

Marketing Manager

OVO Energy

Supplier Sites

London 8 March 2010 12:45pm

19. Jo Thornhill

Money Sector/Consumer Affair Correspondent

Mail on Sunday/ Daily Mail

London 24 February 2010 9.30am

20. Joe Malinowski

TheEnergyShop.com

Energy Comparison Sites

London 5 March 2010 3:30pm

21. Kate Hobson

Quality Monitoring Officer

Consumer Direct

London 30 April 2010 8:46am

22. Katherine Marshall

Regulation Manager

Scottish and Southern Energy (SSE)

Supplier Sites

London 6 May 2010 2:30pm

23. Maria Chappell

LoCO2 Energy Ltd

Supplier Sites

London 29 March 2010 3:30pm

24. Mark Vickery

Senior Marketing Manager

Fundraising Innovation Ltd.

Incorporating firsthelpline.com, energyhelpline.com and switchandgive.com

Energy Comparison Sites

London 20 November 2009 2:00pm

25. Martin Hickman

Consumer Affair Correspondent

The Independent

London 19 February 2010 10:30am

26. Michael Abrey-Bugg

Energy Manager

Age UK

London 15 June 2010 10:00am

27. Mike Cheshire

PR Manager

Ecotricity

Supplier Sites

London 2 March 2010

28. Miles Brignall

Money Sector/Consumer Affair Correspondent

The Guardian Newspaper

London 16 June 2009 11.00am

29. Phil Levermore

Managing Director

EBICo Ltd

Supplier Sites

London 9 March 2010 3:45pm

30. Professor Jon Stern

Research Director

The Centre for Competition and Regulation Policy

City University

London 9 March 2010 2:30pm

31. Professor Michael Pollitt

Assistant Director of the ESRC Electricity Policy Research Group

Executive Director of the Electricity Policy Research Group,

University Senior Lecturer in Business Economics,

Cambridge University

Cambridge Judge Business School

London 11 March 2010 2:00pm

32. Professor Stephen Littlechild

Honorary Professor

University of Birmingham

Business School

London 15 March 2010 11:00am

33. Professor Steve Thomas

Professor of Energy Studies

University of Greenwich

Business School

London 12 March 2010

34. Professor Catherine Waddams Price

Director of the ESRC Centre for Competition Policy

London 17 March 2010 3:30pm

35. Raymond Jack and Pamela Kelly

Raymond Jack: Director, Energy Retail

Pamela Kelly: Regulation and Compliance Manager

Scottish Power

Supplier Sites

London 31 May 2010 3:30pm

36. Richard Eden

Managing Director

UK Power Limited

Energy Comparison Sites

London 25 February 2010 3:00pm

37. Sophy Fearnley-Whittingstall

Head of PR and Communication

Good Energy

London 2 March 2010

38. Susan Carr

Financial Capability Trainer

Hillingdon Citizens Advice

London 26 May 2010 1:00pm

39. Tony Herbert

Social Policy Officer

Citizens Advice

London 22 March 2010

40. Tom Ballard

Consumer Voice Project Officer

Consumer Direct

London 4 May 2010 10:00am

Appendix 2 to Chapter 3

Summary of other related studies relating to regulation of electricity sectors				
The author and years of publication	Research topic	Examined variables	Method	The findings
Moore (1975) (before an era of liberalisation)	The impact of the use of regulation on energy price reduction in the USA.	The relationship between quantitative independent variables such as the percentage of investor-owned electric utilities within the electricity sectors, and a dependent variable of average market electricity price.	Statistical regression was used for verifying the research hypothesis.	Regulation did not contribute to electricity price reduction. Instead, it shows that price will positively increase when applying regulation within the system.
Woo et al. (2003)	Why electricity market reform can simply fail to deliver better electricity service, including analysing the issues that may contribute to the adverse outcome.	The way the wholesale market connected to various participants, using three criteria to give an evaluation: 1) the competitiveness of the market, looking at market entry barriers; 2) market function, looking at how the market enables market participants to make informed choices; and 3) the cost of electricity	Case studies: UK, Norway, Alberta, and California.	Market power has caused market failure and has been a main barrier against public benefits. The number of consumers engaged with market was inadequate. Also, market failed to low the prices close to the cost of production.

		production, looking at electricity prices and marginal cost		
Sioshansi (2006)	The experiences of electricity markets in the US and the UK.	The overall view of electricity sectors, including the retail system, and analysing: 1) the cause of the shortcomings of the regulated system leading to the introduction of electricity sector reform; and 2) the remaining unresolved issues, as a result of these changes.	Case studies: the US and the UK, using national statistics issued by various organisations such as Ofgem and NAO.	The expectation with regard to private companies would do better to deliver energy services through a well competitive market to consumers has not yet been fulfilled. Only large consumers have benefited from the reformed energy system. Additionally, consumers are having difficulty comparing offered tariffs; market power was found to relate to this undesirable result.
Anderson (2009)	Electricity restructuring and the perspective of market failure.	Each country's history of reformation policy implementation, experiences, and results, focusing on: electricity prices relating to fuel poverty, a balance between market force and regulation, regulatory framework, the performance of the regulator.	Case studies: reformed electricity sectors in the UK, Spain, Portugal, Germany, France, Australia, and the USA	Large and small consumers were not satisfied with the new system in which governmental agencies failed and regulatory authorities failed to benefit and protect them. Householders had difficulty using information to switch suppliers, thereby lessening competition and

				<p>creating inefficient market. The regulatory regime was seen as disadvantage to the reformed energy sector because it could not prevent an uncompetitive situation from arising. Additionally, the regulator often focused on the interests of the industry and on economic issues. Moreover, market power became a critical issue arising from the collusive horizontal and vertical integration of larger firms, thereby accelerating price increases. The study proposed ending the energy sector reform.</p>
Rangel (2008)	<p>A creative intervention through competition policy by authorities and the regulator to prevent market power.</p>	<p>Market power within the reformed electricity system where hydro power became dominant and was presented as the most reliable energy produced in the whole generation sector. The study looked at four main criteria: 1) very low</p>	<p>Case studies: the UK, New Zealand, Canada, and Norway.</p>	<p>Firms employed strategic allocations of energy output over time. This was because hydro generation was more flexible than thermal-based power generation. In addition, mergers created market power and limited competition. The study argued for</p>

		response to price changes by consumers; 2) generation capacity and transmission constraints; 3) limited scope of market entry; and 4) significant differences in energy production technology which limits generation substitution.		more intervention by competition authorities and better strategies to increase competition.
Littlechild (2009)	Use of price regulation and its negative impact on the energy market system.	Regulation and the way the regulator managed to deal with restructuring (replacing public ownership with private ownership)	Case studies: reformed energy systems in Argentina, the UK, the USA, and Canada.	There were alternative ways to deal with regulatory regime without using price regulation because it would impede development within the reformed energy market. The study proposed using many ways such as public hearings as a key way to deal with energy prices.
Stern (2001)	A comparative study with regard to the regulatory regimes and retail systems of electricity sectors.	Pros and cons of each regime with regard to public interests.	Case studies: the UK, the USA, and the EU member states.	The role of the energy regulator is explicit and vital within reformed electricity sectors in European countries, not in the USA where the courts play a major role.

Newberry (2002)	A comparative study of problems of liberalisations in reformed electricity sectors.	The growing evidence of problems that affect allocation and distribution of resources. The study looked at three main areas: 1) competition in wholesale market; 2) adequacy and security of supply; and 3) the introduction of appropriate regulation by the regulator.	Case studies of the USA and European countries.	The regulation for generation and transmission networks required for mitigating market power and for supporting electricity liberalisation was less focused on in EU practice, in comparison with the US's, reflecting the poor performances of the energy regulators.
Coen and Thatcher (2001)	Various aspects of utilities reform in Europe, including the UK.	The study looked at the degree of change, such as the conflict in reform, and the development of the regulatory regime.	Case studies of electricity and of telecommunications.	EU level regulation has influenced national-level regulation and required national regulatory authorities to comply with toward the goal of an EU single market. However, this has courted significant controversy.
Eberlein (2001)	How economic regulation has been introduced and driven at EU level.	The study looked at how European countries adjusted (convergence) regulatory policy and related process towards economic regulation at EU level	Case studies of reformed electricity sectors in European countries, including the UK.	The economic theory of regulation has failed due to the complexity of and differences in regulatory processes within the reformed power sectors of the EU Member States. Some countries in Europe are

				struggling in modifying and applying this new economic regulation towards EU requirement.
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